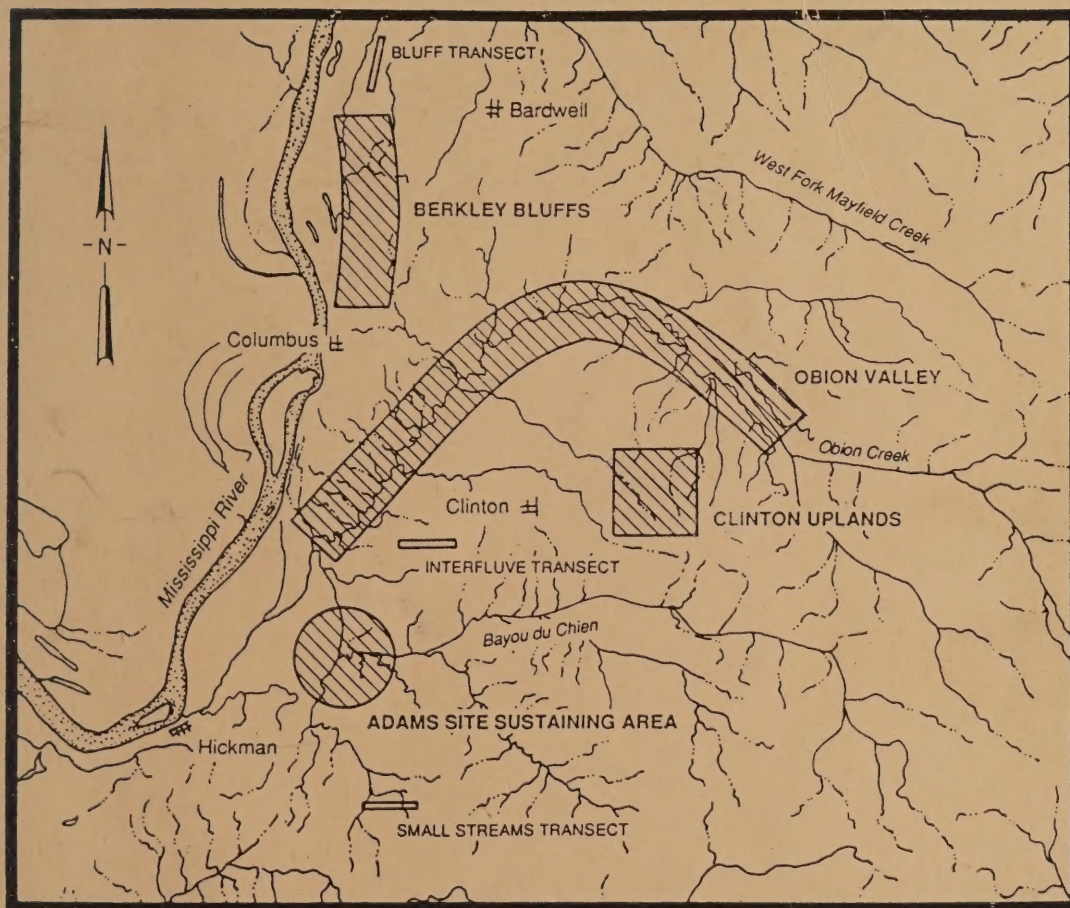


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ARCHAEOLOGICAL INVESTIGATIONS IN CARLISLE, HICKMAN, AND FULTON COUNTIES, KENTUCKY:

SITE SURVEY AND EXCAVATIONS



by
Tom Sussenbach
R. Barry Lewis

with contributions by
Paul P. Kreisa
S. Justine Woodard

WESTERN KENTUCKY PROJECT

Report #4

Department of Anthropology
University of Illinois
Urbana-Champaign

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Tom Sussenbach and R. Barry Lewis

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Department of Anthropology
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Urbana-Champaign, Illinois

October, 1987

PREFACE

The University of Illinois at Urbana-Champaign (UIUC) Western Kentucky Research Project began in 1983. Until recently, our research emphasized the investigation of Mississippian towns, a topic that is still my principal interest and one that is shared with several other archaeologists who are associated with the project. With the addition of new project participants, however, the scope of the UIUC research commitment in this region has expanded to encompass the entire archaeological record, several different theoretical perspectives (not all of which are necessarily compatible), and a broad range of research questions. The Reports series is intended as a vehicle to disseminate some of the basic data of our research to other scholars who are working in this and adjacent regions. The strength of the series lies in the "freshness" of the research results -- it is intended for working documents that report recent investigations.

This monograph brings to a close one of several projects to which the Western Kentucky Project participants have committed themselves over the past few years. Adequate survey coverage of the western Kentucky border counties has been needed for a long time, and it is unlikely that the necessary coverage will emerge readily from contract archaeology fieldwork. Therefore, in early 1984 I proposed to the Kentucky Heritage Council a survey of selected major physiographic zones that could serve both research and resource planning objectives. Their response was encouraging and I designed the project reported here with their encouragement and support, and with the support of the University of Illinois Research Board and Department of Anthropology.

Tom Sussenbach accepted the often onerous job of "Field Director" for the project. He was responsible for the organization and implementation of the fieldwork, and the preparation of the first draft of this report. We co-authored the second draft. My other tasks as junior author were those of an editor and illustrator.

The monograph provides valuable new data on prehistoric site density and distribution patterns in the major micro-environments of the Western Kentucky Border. It adds significant new insight into the nature of Middle and Late Woodland occupations in the study region, and greatly clarifies several aspects of the nature of the Woodland-Mississippian "transition" in the Ohio-Mississippi rivers confluence region.

R. Barry Lewis
21 July 1987

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This project was funded in part by grants from the Department of the Interior, National Park Service, under the provisions of the National Historic Preservation Act of 1966 and subsequent amendments, and from the Commonwealth of Kentucky through the Kentucky Heritage Council under the provisions of KRS 171.381. The opinions expressed herein are not necessarily those of the National Park Service or the Kentucky Heritage Council. Additional support was provided by the University of Illinois Research Board.

We thank the landowners whose cooperation made this project possible. Despite their often hectic schedules, they made time for an archaeologist's requests. Many rewarding hours were spent in conversation with these individuals. We regret not identifying them individually, but their privacy and the preservation of sites on their properties are better served by not publishing their names.

We would also like to thank county ASCS office staff members, Donald Terry (Carlisle County), Freda Templeton (Hickman County), and Evlynn Everett (Fulton County) for their assistance and patience.

The hard work of the field and lab crews was a major aid in this research. The project crew consisted of Margaret Dawson, Sarah Granato, and Stephen Smith. The 1985 University of Illinois summer archaeological field school under Lewis' direction also collected some of the data reported here. Paul Kreisa and Lynne Wolforth were the field school teaching assistants. The field assistants and students are thanked for their many valuable contributions to the overall success of the project.

The Wickliffe Mounds Research Center staff were of great assistance. Drs. Kit Wesler, Sarah Neusius, and Bryan Kwapil often provided us a place to stay, and were always warm hosts.

The Office of State Archaeology (OSA) provided rapid service in assigning state site numbers. Dr. R. Berle Clay gave advice and encouragement, and was especially helpful regarding the ceramic analysis.

Thanks are due to David Minor and Janice Pankey, Department of Anthropology staff at the University of Illinois. Dave did his usual fine photographic work and Janice handled much of the paperwork for the project.

Finally, we would like to thank our colleagues at the University of Illinois who share our interest in the prehistory of western Kentucky. UIUC graduate students, Richard Edging, Paul Kreisa, Charles Stout and Lynne Wolforth, provided support, both by their own research in the study area and their interest in this project. Our discussions have always been fruitful.

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INTRODUCTION

Archaeologists from the University of Illinois at Urbana-Champaign (UIUC) have a continuing research commitment in the western Kentucky counties bordering the Mississippi River. These counties contain abundant and diverse archaeological resources that have considerable potential for aiding the understanding of the prehistory of the strategically located region surrounding the confluence of the Ohio and Mississippi rivers (Figure 1).

Mississippian towns with mounds, plazas, and extensive village areas represent the most archaeologically visible site type in the region and have been the focus of previous reports in this series (Edging 1985; Lewis 1986; Stout 1985; Wolforth 1987). Archaeological understanding of the region is biased towards the Mississippian towns and other large sites in or adjacent to the major floodplains. Although those sites provide an important data base for archaeological research, they represent only one part of local late prehistoric settlement patterns. Interfluves and bluffs, which comprise all but a small portion of the study region, are essentially unknown.

A probability-based sample survey of archaeological sites in interfluvial and bluff localities of the Ohio-Mississippi confluence region was begun in 1984 by UIUC archaeologists. The 1984 project consisted of a pilot study aimed at assessing the requirements of a regional survey. A total of 367 ha were surveyed, and 19 new sites were reported to the OSA. Based upon the pilot survey results, a large-scale survey was undertaken during 1985 and 1986. The area surveyed was 1044 ha, and 36 new sites were located. In addition, three sites, Marshall (15CE27), White (15FU24), and Indian Camp Lake (15CE19), were selected for test excavations. This monograph describes the results of the surveys and the test excavations.

Following an introductory section in which the local environment and previous archaeological research are described, Part I of this report addresses the major results of the 1984-86 site surveys and the spatial patterning revealed by analyses of the collected data. Part II describes the results of each test excavation and assesses the significance of each site in a regional context.

An appendix contains precise information on the locations of all sites and surveyed areas described in the main body of the report. The appendix has been bound separately in order to facilitate the maximum dissemination of the archaeological information without needlessly endangering the sites or violating the privacy of the landowners who agreed to participate in this study. The appendix is available from the Kentucky Heritage Council to qualified researchers.

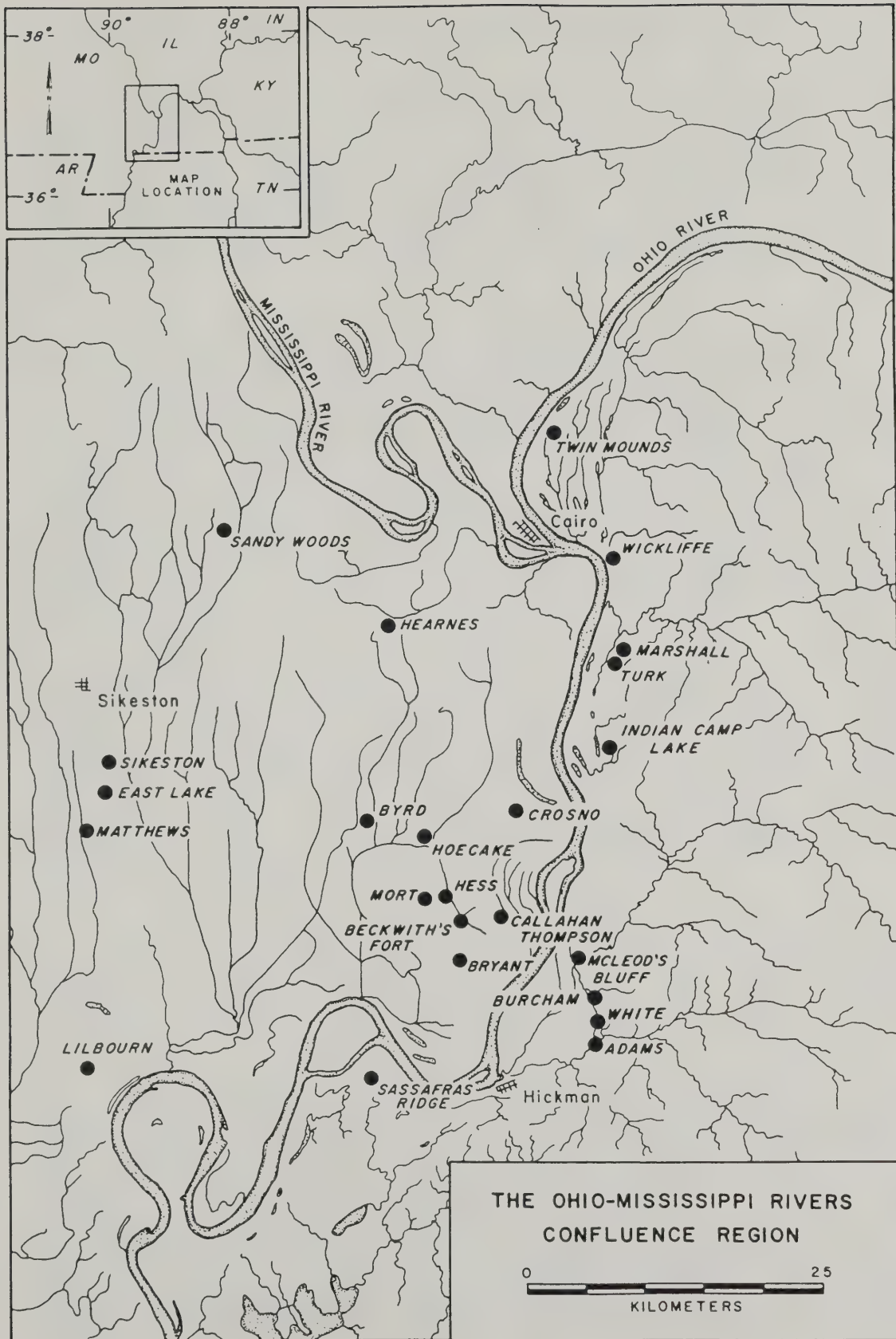


FIGURE 1. Ohio-Mississippi Rivers Confluence Region.

The Western Kentucky Environment

The western portion of the Jackson Purchase, comprising Carlisle, Hickman and Fulton counties, is the study region of this project. The four major physiographic zones include the Mississippi River floodplain, the adjacent loess bluffs, the tributary stream valleys, and the dissected uplands. Descriptions of these zones are given by Davis (1923), Lewis (1974, 1986) and Loughridge (1888), so only a brief summary of the major characteristics of each zone need be presented here.

The Ohio River empties into the Mississippi at Cairo, Illinois (Figure 1). The Lower Mississippi Alluvial Valley, already wide at this point, becomes even broader in the valley below Cairo. The floodplain on the Kentucky side is relatively narrow, and has been so for at least the last few thousand years. Its topography consists of abandoned channels and natural levee remnants. Silt loams and sandy loams comprise the old levees and support a dense vegetation consisting of cottonwood, sycamore, and ash with an understory of cane. Soils with a high clay content occur in the backswamps, and due to the prolonged inundation of these areas, the vegetation is composed of water-tolerant species, especially bald cypress. Oxbow lakes and sloughs retain water and provide a fertile habitat for hydrophytic plants.

The bluffs bordering the floodplain rise abruptly to heights of 50 m in places and are composed of thick loess deposits that cap several meters of Pliocene gravels and sands (Olive 1980). Numerous small streams and gullies have produced a topography of irregularly shaped ridges and deep ravines along the bluffs. The native vegetation was a beech-tulip forest with dense stands of cane as a common undergrowth (Lewis 1974). The bluffs are not continuous along the floodplain border. Between Obion Creek and Bayou de Chien, the steep bluffs are absent and the dissected uplands extend west to border the Mississippi River floodplain.

The eastward transition from the loess bluffs to dissected uplands is gradual. The topography becomes more rolling and the vegetation changes to a predominantly oak-hickory forest. The highest absolute elevations in the study region occur in this zone, and define the watersheds of the main streams that drain the border counties.

Three major streams, Mayfield Creek, Obion Creek, and Bayou de Chien, drain the rolling uplands and bluffs. Each creek has a 2 to 3 km wide floodplain in the lower portions of their courses. At the mouth of each stream and extending a short distance upstream, the soils and vegetation are similar to those of the Mississippi Valley. Further upstream, valley soils and vegetation change to a distinctly small stream physiographic zone. Erosion of surrounding hillsides due to forest clearing for agricultural purposes has resulted in the recent deposition of alluvium on the valley floors. In places these deposits exceed several meters in depth (John Wood, Westvaco Corporation, personal communication).

The study area's climate is noted for mild winters, hot summers, and generally adequate rainfall. Daily temperature averages range from 79° F in July to 37° F in January (Newton and Sims 1961). Monthly precipitation averages between 7 and 13 cm with a slight peak in the fall. Summer precipitation occurs mainly as intense thunderstorms with considerable differences in local rainfall amounts. Droughts occur, but are generally localized or short in duration. Snowfall averages just over 20 cm a year.

Previous Archaeological Research

The western Kentucky border counties have long been recognized as containing some of the most impressive archaeological sites in the state (Clay 1981; Funkhouser and Webb 1932). Large mound centers, most of which date to the Mississippi period, were among the earliest reported sites in Kentucky (Loughridge 1888; Rafinesque 1824; Thomas 1894). Several sites were excavated in the early 1900s by Clarence B. Moore as part of his archaeological investigations of the Southeast (Moore 1916). During the 1930s, Fain and Blanche King conducted large scale excavations at Wickliffe (15BA4), and developed the site as a tourist attraction (King 1936, 1937). University of Kentucky professors Webb and Funkhouser recorded a number of sites in the region during their state-wide survey (Funkhouser and Webb 1932), and excavated at the Mississippian town site of McLeod Bluff (15H11) (Webb and Funkhouser 1933).

For several decades after the 1930s little research was carried out in the study region. Research effectively resumed with Clay's investigations of the archaeology of the Jackson Purchase (Clay 1961, 1963, 1976, 1979). Murray State University (MSU) archaeologist, Ken Carstens, has carried out research in the region (Carstens 1981, 1982), and MSU recently turned Wickliffe Mounds into an active research center under the direction of Dr. Kit Wesler. Several field seasons of research at Wickliffe have provided new understanding of this site (Wesler 1984a, 1985), and an analysis has begun of materials from the King excavations.

Several archaeological investigations have also occurred as part of environmental impact assessments on proposed federal or state projects (e.g. Carstens 1982; Gray and Watson 1981; McGraw 1981; McNerney and Nixon 1980; McNerney and White 1980; Schock 1978; Schock and Langford 1978). These investigations have located sites in the region, but generally have been confined to particular physiographic zones, often of small areal extent.

Beginning in 1983, UIUC personnel initiated a long-term research program in the region. A major goal of this research is understanding the development of Mississippian culture, especially in terms of the growth, maintenance, and demise of large, planned communities (Lewis 1986:1). Initial investigations focused on several large Mississippian towns, among them the Adams (15FU4), Sassafras Ridge (15FU3), Turk (15CE6), and Wickliffe (15BA4) sites (Edging 1984, 1985; Lewis 1983,

1985, 1986, 1987a; Lewis and Mackin 1984; Stout 1984, 1985). In 1985, the focus of the research expanded to include the entire prehistoric and historic archaeological sequence of the region, while continuing an emphasis on its late prehistory.

Regional Prehistoric Chronology

Clay (1981) has synthesized the general prehistory of the region, and Lewis (1983, 1986, 1987a, 1987b) and Wesler (1984b) have detailed the changes during the Mississippi and Historic periods, respectively. Based largely on research reported here, Sussenbach et al. (1986) have outlined cultural changes during the Middle and Late Woodland periods. Our understanding of older occupations is based largely on inferences from what is known of adjacent regions.

Figure 2 presents the portion of the current UIUC "working" regional sequence that is relevant to the scope of this monograph. This chronology treats periods and phases as primarily temporal units with fixed arbitrary boundaries (Lewis 1987a). The units provide a framework within which change and continuity in cultural adaptations can be studied productively. They are not intended as units of cultural similarity, nor are they grounded in the content of specific material assemblages. The resulting chronological framework is therefore kept largely separate from cultural units.

The boundary lines that separate the temporal units are not based upon cultural criteria, because in our opinion this breeds confusion and contributes to the illusion that those units are discoverable rather than being essentially arbitrary. The stress placed on the word "based" is important since cultural data are indeed considered in the construction of the phases, and are particularly useful in spatial comparisons. The crucial point is that they do not, however, figure as key criteria of the temporal dimensions of the phase definitions.

It is also unnecessary, if not impossible, to determine adequately the beginning of Mississippian culture and to treat it as the beginning of the Mississippi period. The Mississippian cultural development was not an event, but a complex process with a long prehistory. By establishing the phases as primarily temporal units, the boundaries can remain fixed, and the cultural content of a given phase can be continually revised as new research results accrue (Lewis 1987a).

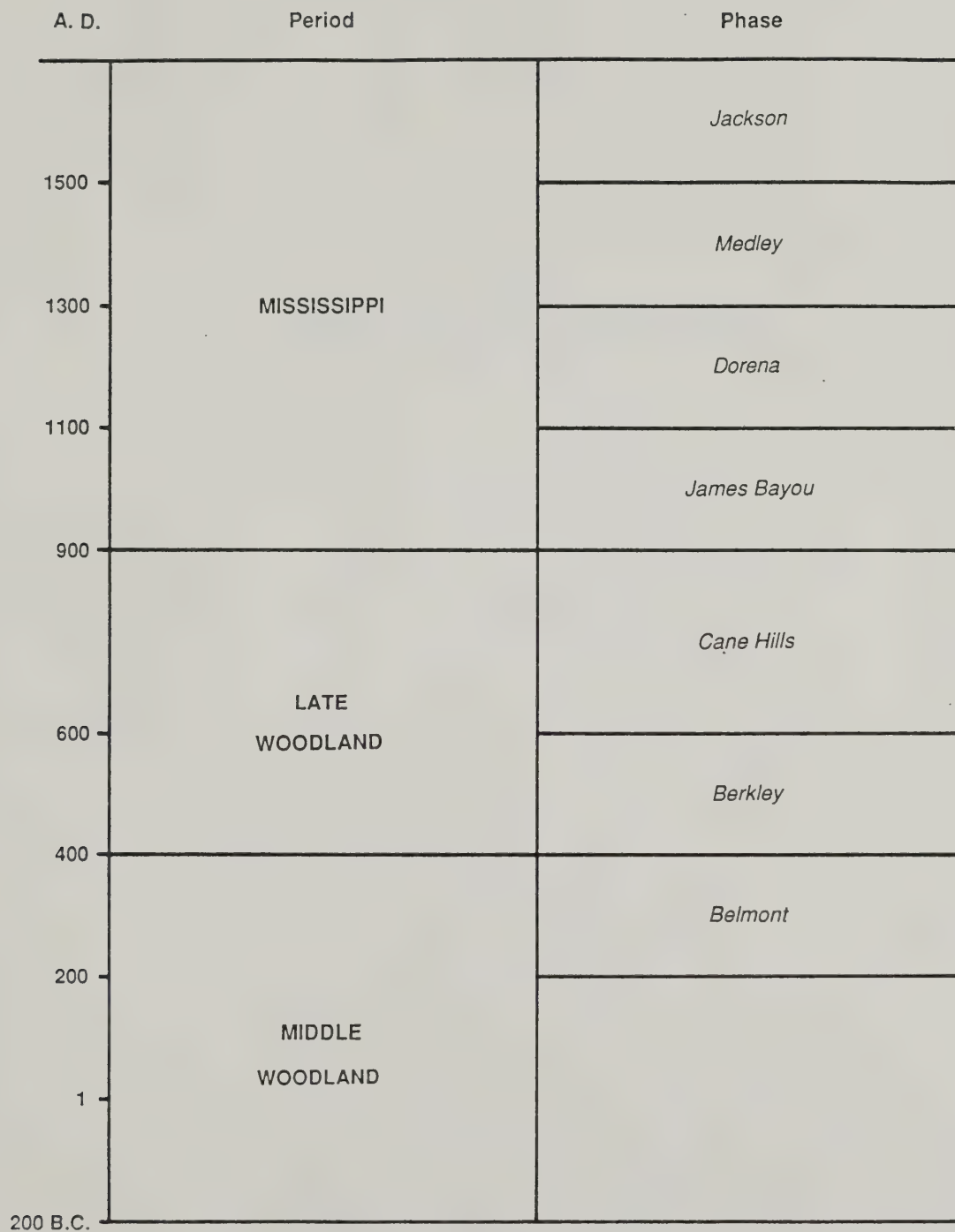


FIGURE 2. Regional Chronological Sequence.

PART I:

SAMPLE SURVEY OF FOUR STUDY AREAS

SURVEY DESIGN AND METHODOLOGY

Survey Design

The 1984 pilot study entailed coverage of three transects, each of which measured 3 by 0.5 km. The objective was to provide the information necessary for planning the main survey, as well as to conduct a preliminary assessment of the density and distribution of sites in the study region. The Bluff Transect was placed along the Mississippi bluffs at the location of the Turk site in Carlisle County (Figure 3). The Interfluvial Transect sampled the dissected uplands west of the town of Clinton in Hickman County. The Small Streams Transect was positioned across two small tributaries of Bayou de Chien in Fulton County. These transects allowed comparisons of site densities and distributions within three physiographic zones, and also sampled site distributions around Turk, a Mississippian town.

The goals of the 1985-86 main survey were to assess in greater detail the density and distribution of sites across physiographic zones, and to delineate the Mississippian settlement pattern around a major town site. Random sampling of four localities was implemented, three of which represented distinct physiographic zones. The fourth locality centered on the Adams site in Fulton County. The area within the study units ranged from 20 km² to 102 km². The goal of the survey was a 7.5 to 10% sample of each unit. The realized samples are between 4.5 and 9.6%. The 1985-1986 main survey units and their sampling designs are:

1. Berkley Bluffs (Figure 3) - This unit comprises the bluffs, adjacent uplands, and floodplain terraces from the Laketon Crossing in Carlisle County, south about 10 km to the Columbus-Belmont State Park. It was sampled by four 0.25 by 2 km transects oriented perpendicular to the linear trend of the bluff with the midpoint of each transect fixed at the bluffcrest. The northernmost transect was randomly placed within the first 2.5 km of the unit. Subsequent transects were spaced at intervals of 2.5 km from the initial transect location. The transects encompass 10% of the 20 km² unit.
2. Obion Valley (Figure 3) - This unit comprises the valley and adjacent uplands of Obion Creek from the valley mouth near the Hickman-Fulton county line upstream approximately 34 km to the confluence with Brush Creek just west of the Graves County line. Two strata were defined within this unit based upon topographical differences. Stratum I extends from the creek mouth upstream 20 km to the point where the creek reaches its northernmost point and then bends towards the southeast. In this stratum the boundary between the creek valley and adjacent uplands is more abrupt on the south than the north side of the creek. Stratum II encompasses the remaining 14 linear km of the survey unit

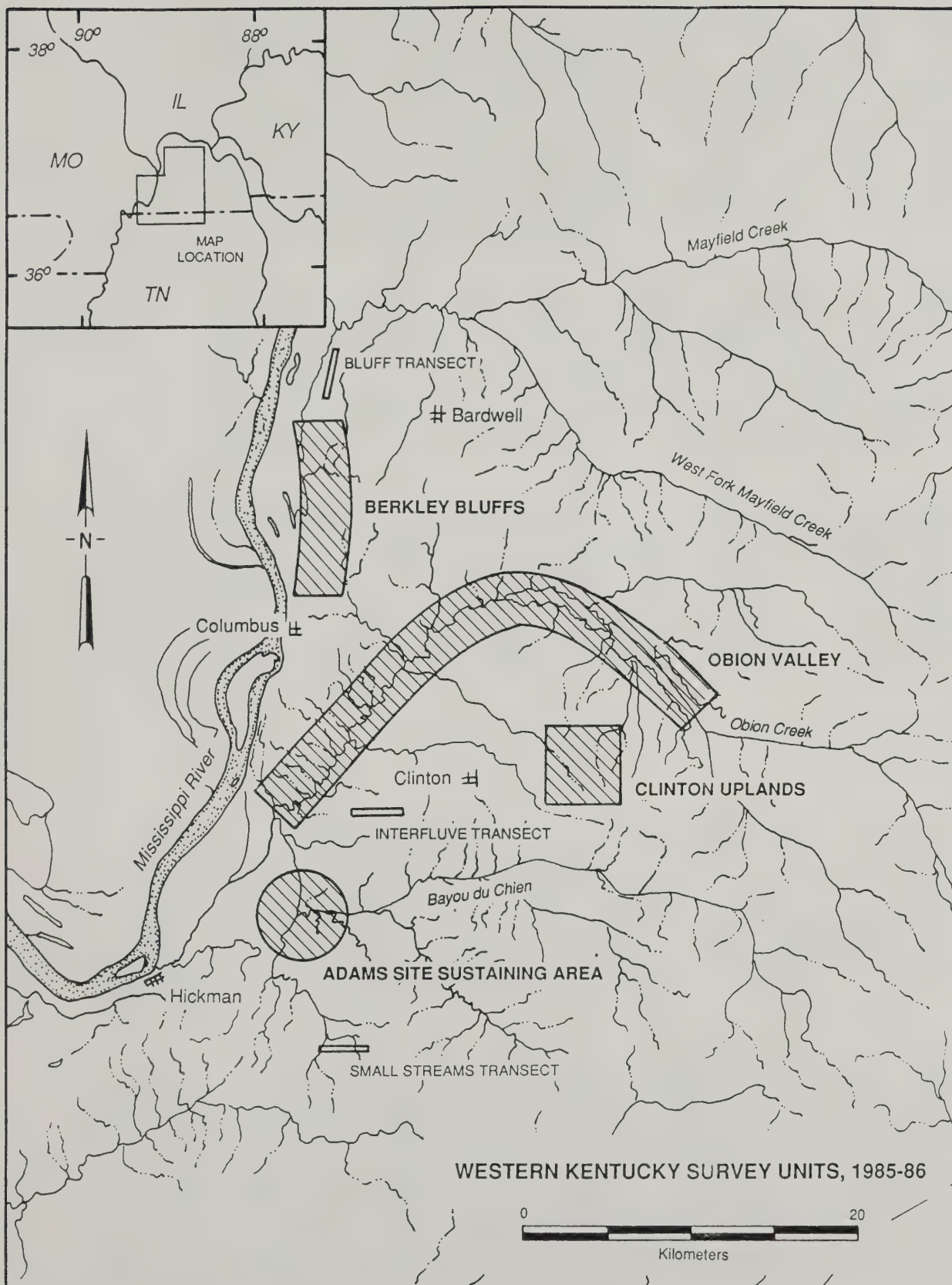


FIGURE 3. General Locations of Survey Units.

upstream from Stratum I. The abrupt difference between the creek valley and adjacent uplands in this stratum is on the north side of the creek rather than the south side. Both strata were sampled with 0.25 by 3 km transects oriented perpendicular to the creek valley. Six transects were placed within Stratum I and four within Stratum II. The first transect in each stratum was randomly selected within the first 3.3 km. Subsequent transects were placed at intervals of 3.3 km from the preceding transect. The transects represent approximately 7.5% of the unit.

3. Clinton Uplands (Figure 3) - This unit is a portion of the interfluvium between the Obion Creek and Bayou de Chien valleys. It is a gently rolling upland that is crossed by streams that are no larger than Rank 2 in the Strahler system. The unit measures 5 km east-west and 4 km north-south. Eight quadrats, each measuring 0.5 by 0.5 km were randomly selected to sample this unit. The sample represents 10% of the unit.
4. Adams Site Sustaining Area (Figure 3) - This unit comprises the terrain within a 3 km radius of this Mississippi period town site on Bayou de Chien. The delineated area, encompassing about 27 km², includes portions of the uplands, the Bayou de Chien valley, and the Mississippi River floodplain. Thirteen quadrats, each measuring 0.5 by 0.5 km were randomly selected to sample this unit. The sample represents 12% of the unit.

Survey Methods

After the selection of survey units had been made, the initial step in the field research was to obtain landowner permission for access to the units. Most landowners readily agreed to allow survey of their properties. Only within the Obion Valley unit did a significant number of landowners deny permission for survey. The reason for denial related to an ongoing dispute between some landowners and government agencies over drainage problems in the valley. It was impractical to relocate the transects due to the large size of some of the landholdings.

Two survey techniques were employed depending upon the surface visibility encountered. Moderate to high visibility areas (less than 90% ground cover) were examined by pedestrian survey at intervals of 10-20 m. Low visibility areas were surveyed by shovel tests, although bare areas such as field roads or cattle paths occasionally permitted pedestrian survey to be employed. Shovel tests measured 40 by 40 cm in horizontal plan and were excavated to a depth of 25 cm or until sterile soil was encountered. The interval between shovel tests was generally 20-25 m, although on steep slopes where the likelihood of sites was reduced, the interval was expanded to 30-40 m.

Data on ground visibility, survey technique, and location of recovered materials were recorded in the field on USGS 7.5 minute topographic maps or enlarged copies of such maps. Dimensions of artifact scatters were measured by pacing, or counting crop rows where they were present.

Complete collection of artifacts was undertaken at all previously unrecorded sites. Artifact samples were collected at sites that were revisited during the survey. All materials were washed, catalogued and analyzed either in the field laboratory in Carlisle County, or at the University of Illinois campus.

Kentucky Archaeological Site Survey Forms were completed for those locations that met the requirements for site designation as outlined in the December, 1984, memorandum from the Office of State Archaeology. When artifact scatters in high visibility areas were minimally separated by 50 m of intervening area without material, each was considered a separate site. In most cases the actual interval was approximately 100 m. In areas where shovel testing was employed, a minimum distance of 100 m between artifact occurrences was required before the locations were treated as separate sites. Locations of cultural materials that did not meet the requirements for site designation were classified as isolated finds.

SURVEY UNITS AND SITES

1984 Pilot Study

A total of 367 ha of the 450 ha contained within the three pilot transects were surveyed, and 19 new sites were recorded. Table 1 summarizes the results of this survey.

The overall density of 5.2 sites per square km suggests that approximately 9,000 sites may exist within the 1,800 km² of Carlisle, Hickman, and Fulton counties. The greatest site densities occur in interfluvial and tributary stream locations. However, these numbers are affected by two factors. First, most of the examined area in the bluffcrest transect required shovel testing. This reduced our ability to find sites in those locations. Second, bluffcrest sites are larger than sites in the other transects. As a result, although the number of sites is low, the total site area is higher in the bluffcrest transect than in the other transects.

There are also site location trends within each transect. Sites in the bluffcrest transect are situated on the largest level bluff remnants. No sites were recorded on slopes or on small bluff remnants. In the interfluvial transect, most sites are on ridges or ridge slopes. Sites in the small tributary stream transect occur either on ridge crests or on slight rises in the floodplain.

Most of the prehistoric sites that could be assigned a temporal placement date to the Woodland periods. Sites and lithic scatters that could not be assigned a temporal affiliation are generally small. Only one of these sites exceeds 1 ha in area. The two largest sites are both situated on the bluffcrest. One site, 15CE25, covers 3 ha and has an Early Archaic component and an occupation dating to one of the Woodland periods. The Marshall site covers 8 ha and dates to the terminal Late Woodland and early phases of the Mississippi period.

The pilot survey results provided important data for the planning of the main survey project. The effectiveness of different survey techniques were examined, and a better understanding of the region was obtained. Fewer sites were discovered in the bluff transect than in the interfluvial or small tributary stream transects, but the larger average size of sites in the bluff transect suggests a more intensive utilization of that zone. It was also learned that Mississippian settlement in the Turk site locality was focused on a single large village rather than on small hamlet or village locations distributed in the hinterland around the town. Preliminary site density estimates suggest that a large number of sites that would be potentially eligible for listing in the National Register of Historic Places occur in the study area.

TABLE 1. Summary of Pilot Survey Data.

| Item | Bluff Transect | Interfluvial Transect | Small Stream Transect | Totals |
|-----------------------------------|-------------------|--------------------------|--------------------------|--------|
| Unit Area (ha) | 150 | 150 | 150 | 450 |
| Area Surveyed (ha) | 109 | 134 | 124 | 367 |
| Pedestrian | 9 | 112 | 124 | 245 |
| Shovel Tested | 100 | 22 | 0 | 122 |
| Percent Surveyed (%) | 67 | 75 | 83 | 82 |
| New Sites Recorded | 3 | 6 | 10 | 19 |
| Pedestrian | 0 | 6 | 10 | 16 |
| Shovel Tested | 3 | 0 | 0 | 3 |
| Sites Revisited | 1 | 0 | 0 | 1 |
| Site Density (#/ha) ^a | 3.67 | 4.48 | 8.06 | 5.45 |
| Pedestrian | 0 | 5.35 | 8.06 | 7.75 |
| Shovel Tested | 3.0 | 0 | 0 | 2.46 |
| Total Site Area (ha) ^b | 10.9 | 2.8 | 3.4 | 17.1 |
| Site Area Density ^c | 10.0 | 2.1 | 2.7 | 4.6 |
| Site Size (m ²) | | | | |
| Mean | 36,300 | 4,600 | 3,400 | 8,960 |
| Median | 29,000 | 3,500 | 2,650 | 2,700 |
| Percent of Sites >1 ha (%) | 67 | 17 | 0 | 16 |
| No. of Ident. Components | 6 | 6 | 11 | 23 |
| Unknown Prehistoric | 0 | 3 | 4 | 7 |
| Archaic Periods | 1 | 0 | 0 | 1 |
| Woodland Periods | 2 | 1 | 4 | 7 |
| Mississippi Period | 1 | 0 | 0 | 1 |
| Historic Period | 1 | 2 | 3 | 6 |

^a Site Density = # of recorded sites in transect/surveyed area of transect

^b Total Site Area = Sum of areas of all recorded sites in ha

^c Site Area Density = Total Site Area divided by Area Surveyed

1985-1986 Main Survey

The main survey resulted in a total coverage of 1044 ha in four units. Table 2 summarizes the survey results.

Berkley Bluff Unit

The study unit transects encompassed 200 ha, of which 162 ha were accessible and were surveyed. Only 30 ha were surveyed by pedestrian survey; the remaining 132 ha required shovel testing. Of the survey total, 57 ha were on the floodplain, 37 on the bluffslope, and 67 ha on the bluffcrest. Seven new sites were recorded and the boundaries of a previously reported site were revised. The overall density is 4.9 sites per square km. The bluffcrest density is 8.9 and the floodplain density is 3.5 sites per square km.

Sites cover 20.3 ha (12.5%) of the total area surveyed with 16.9 ha on the floodplain and 3.4 ha on the bluffcrest. The floodplain sites are much larger than the bluffcrest sites. Both floodplain sites are greater than 1 ha in area. One site, Indian Camp Lake (15CE19), covers about 51 ha, of which about 15 ha are within the transect. The mean size of the bluffcrest sites is 0.6 ha, and none is larger than 1 ha.

A total of 10 components could be identified at the eight sites. Seven sites appear to have one component each; the Indian Camp Lake site has three components. Two of the six bluffcrest sites have unidentified prehistoric components, three have Woodland components, and one has a historic component. One floodplain site has an Early Woodland component. The Indian Camp Lake site has evidence of Late Archaic through Mississippian period occupations.

The overall density of approximately 5 sites per square km suggests that as many as 100 sites are present within the Berkley Bluff survey unit. This is probably a conservative estimate since the large percentage of land that required shovel testing probably lowered the overall site density estimate.

Obion Valley Unit

A total of 450 of the 750 ha encompassed by the transects was surveyed. Survey permission was denied by several landowners, and this limited the accessible area. Pedestrian survey took place on 159 ha, and the remaining 291 ha were shovel tested. Sixteen sites were recorded within the survey transects, of which 12 were located by pedestrian survey and four by shovel testing.

The overall density was 3.6 sites per square km. The density from pedestrian survey was 7.5 sites per square km, and the density from shovel testing was 1.4 sites per square km. Approximately 360 sites are estimated to exist in the 102 km² survey unit.

TABLE 2. Summary of Main Survey Data.

| Item | Berkley Bluffs | Obion Creek | Clinton Uplands | Adams Site | Totals |
|-----------------------------------|-------------------|----------------|--------------------|---------------|--------|
| Unit Area (ha) | 2,000 | 10,200 | 2,000 | 2,700 | 16,900 |
| Area in Sample (ha) | 200 | 750 | 200 | 325 | 1,475 |
| Area Surveyed (ha) | 162 | 450 | 175 | 257 | 1,044 |
| Pedestrian | 30 | 159 | 128 | 110 | 427 |
| Shovel Tested | 132 | 291 | 47 | 147 | 617 |
| Percent Surveyed (%) | 81 | 60 | 88 | 79 | 71 |
| New Sites Recorded | 7 | 16 | 0 | 11 | 34 |
| Pedestrian | 6 | 12 | 0 | 10 | 28 |
| Shovel Tested | 1 | 4 | 0 | 1 | 6 |
| Sites Revisited | 1 | 0 | 0 | 1 | 2 |
| Site Density (#/ha) ^a | 4.94 | 3.56 | 0 | 4.28 | 3.35 |
| Pedestrian | 23.33 | 7.56 | 0 | 9.09 | 6.79 |
| Shovel Tested | 0.76 | 1.37 | 0 | 0.68 | 0.97 |
| Total Site Area (ha) ^b | 20.36 | 6.86 | 0 | 10.74 | 37.96 |
| Site Area Density ^c | 12.6 | 1.5 | 0 | 4.2 | 3.6 |
| Site Size (m ²) | | | | | |
| Mean | 70,000 | 4,200 | 0 | 9,700 | 21,000 |
| Median | 8,100 | 4,000 | 0 | 1,700 | 5,500 |
| Percent of Sites >1 ha (%) | 18 | 6 | 0 | 27 | 17 |
| No. Ident. Components | 10 | 17 | 0 | 16 | 43 |
| Unknown Prehistoric | 2 | 8 | 0 | 7 | 17 |
| Archaic Periods | 1 | 1 | 0 | 2 | 4 |
| Woodland Periods | 5 | 5 | 0 | 3 | 13 |
| Mississippi Period | 1 | 1 | 0 | 3 | 5 |
| Historic Period | 1 | 3 | 0 | 1 | 5 |

^a Site Density = # of recorded sites in transect/surveyed area of transect

^b Total Site Area = Sum of areas of all recorded sites in ha

^c Site Area Density = Total site area divided by area surveyed

Fourteen of the 16 sites are located in the uplands overlooking the creek valley, and two are situated on valley terraces. Upland sites generally occur on knolls or ridges. The low frequency of floodplain sites is due to the large percentage of floodplain that required shovel testing and the filling-in of the floodplain by silt from surrounding uplands.

The 16 sites have a mean site size of 0.4 ha. Only one site, 15CE40, exceeds 1 ha in area. The total site area in the sampled units represents 1.5% of the investigated land.

All but one of the recorded sites appear to be single-component locations. One site has an Archaic component, five have Woodland components, and three date to the Historic period. A Mississippian component is present at one of the sites with a Woodland occupation. Eight sites are of unknown prehistoric age.

Clinton Upland Unit

Eight quadrats were selected for survey within this unit. Survey coverage was 88% of the 200 ha contained within the quadrats. Pedestrian survey was employed on 128 ha and shovel testing on 47 ha. Despite excellent ground visibility conditions across most of the surveyed area, no sites or cultural material were found. Nevertheless, some prehistoric use of the area is indicated by a small collection of artifacts that were obtained from the study unit by a local landowner. The low prehistoric use of this area is probably related to the resource deficient nature of this zone. Water sources are few and primarily seasonal in occurrence, and soils are low in productivity.

Adams Sustaining Area Unit

Of the 325 ha contained within the 13 quadrats, 257 ha were surveyed. More than half of the surveyed area required shovel testing. The survey localities included 140 ha in the uplands, 82 ha in the Bayou de Chien valley, and 25 ha in the Mississippi River floodplain. Ten new sites were recorded in the sampled quadrats, and one known site, White (15FU24), was revisited. Another reported site, 15FU14, could not be relocated.

The overall site density is 4.3 sites per square km. The site density in the uplands is 6.4, while the valley density is 2.4. No sites were found on the Mississippi River floodplain. The site densities partly reflect the relative amounts of land that required shovel testing in each locality. Only one site was discovered by shovel testing, but large areas were surveyed in this manner.

The total area of 10.7 ha contained within site boundaries represents 4.2% of the surveyed area. Three of the 11 sites are larger than 1 ha in size. The White site is the largest location at 4.5 ha; 15FU83 is next at 2.4 ha; and 15FU90 is 1.5 ha in area.

Site 15FU91 appears to be a single component Mississippian site. Three site locations are multi-component. Two sites have Late Archaic components, and each one has a more recent occupation. An unknown Woodland component is present at one site, and a Mississippian component occurs at the other. Archaic, Woodland and Mississippian occupations are present at the White site. Unidentified prehistoric occupations occur at seven sites. One historic site was also recorded.

Of the three identified sites with Mississippi period occupations, the White site is a large village, and the other two appear to be small hamlets. While some of the sites with unknown components may prove to be small Mississippian sites, this would not substantially alter the impression that most of the Mississippian population around the Adams site resided in large villages or towns.

CULTURAL REMAINS

Artifacts collected during the surveys constitute an important information source for cross-dating and the interpretation of site use patterns. Both prehistoric and historic materials were recovered. Each artifact category is described below.

Prehistoric Artifacts

A wide range of artifact types were collected. The remains from each site are summarized in Tables 3, 4, 5 and 6.

Ceramics

Prehistoric ceramics were found at 17 sites. Attribute analysis was restricted to rim and lip variables. Where possible, the sherds were sorted by types and varieties based on the type descriptions of Lewis (1982, 1986), Phillips (1970), and Phillips et al. (1951). Four new varieties are also introduced, and are described in Part II. Some sherds, which were not assignable to defined types or varieties, are described by temper and surface characteristics.

Mississippi Plain

Coarse, shell-tempered plainware was present at four sites. The collections include two rim sherds from the Marshall site and one rim sherd from the White site. Both of the rims from Marshall are from jars with incurvate rims. One example has a rounded lip and an orifice diameter of 18-22 cm. The other specimen has a flat lip and is too small to permit an accurate rim diameter estimate. The specimen from the White site is from an incurvate rim jar with a rounded lip and a rim diameter of 30-34 cm.

Bell Plain

Fine shell-tempered or grog-tempered, polished plainware sherds were recovered at two sites. Five rims are from the White site and two are from the Marshall site. Four of the rims from White are bowl sherds. Three specimens have excurvate rim shapes and rounded lips; the rim diameter of one of the bowls is estimated at 18-22 cm. The remaining bowl sherd has a flared rim, a rounded lip decorated with exterior notches, and an estimated diameter of 30 cm. The two rims from Marshall represent a bowl and a jar, respectively. The bowl rim has an excurvate shape and a rounded lip. The jar rim has an incurvate shape and a flat lip. Both rims are too small to permit diameter estimates.

TABLE 3. Prehistoric Artifacts from Pilot Survey Sites.

| Artifact Class | CE 25 | CE 27 | HI 48 | HI 55 | HI 56 | HI 59 | FU 68 | FU 69 | FU 71 | FU 72 | FU 74 | FU 75 | FU 76 | FU 77 |
|-----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Ceramics | | | | | | | | | | | | | | |
| Mississippi Plain | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bell Plain | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Old Town Red | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kimmswick Fabric Impressed | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wickliffe Thick | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Baytown Plain | 0 | 86 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mulberry Creek Cordmarked | 0 | 18 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 1 | 0 | 0 | 0 | 0 |
| Larto Red | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Yankeetown Fillet | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Unclassified | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Eroded or <2 cm | 1 | 72 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 43 | 4 | 0 | 0 | 0 |
| Other Fired Clay Artifacts | | | | | | | | | | | | | | |
| Baked Clay Objects | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Daub | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 |
| Chipped Stone Tools | | | | | | | | | | | | | | |
| Projectile Points | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bifaces | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Scrapers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Hoe Fragments and Flakes | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Modified Cobbles | | | | | | | | | | | | | | |
| Grinding Stones | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Multi-use Modified Cobbles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ground Stone Tool Fragments | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Stone Artifacts | | | | | | | | | | | | | | |
| Cores | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| Angular Fragments | 6 | 21 | 1 | 2 | 3 | 0 | 1 | 12 | 4 | 8 | 3 | 2 | 1 | 2 |
| Flakes | 7 | 88 | 2 | 0 | 4 | 2 | 0 | 8 | 5 | 12 | 5 | 1 | 4 | 0 |
| Fire-Cracked Rock | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 |
| Ferruginous Sandstone | 0 | * | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Limestone | 1 | * | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* Recorded in the field, but not collected.

TABLE 4. Prehistoric Artifacts from Berkley Bluff Unit Sites.

| Artifact Class | CE 28 | CE 29 | CE 30 | CE 31 | CE 34 | CE 41 |
|---------------------------|----------|----------|----------|----------|----------|----------|
| <hr/> | | | | | | |
| Ceramics | | | | | | |
| Baytown Plain | 1 | 1 | 0 | 0 | 0 | 1 |
| Mulberry Creek Cordmarked | 3 | 7 | 2 | 0 | 0 | 0 |
| Eroded or <2 cm. | 0 | 4 | 0 | 0 | 0 | 0 |
| Chipped Stone Tools | | | | | | |
| Projectile Points | 0 | 0 | 0 | 0 | 0 | 1 |
| Bifaces | 2 | 1 | 0 | 1 | 0 | 0 |
| Modified Cobbles | | | | | | |
| Pestle | 0 | 0 | 0 | 0 | 1 | 0 |
| Multi-use Modified Cobble | 0 | 0 | 1 | 0 | 0 | 0 |
| Polishing Stone | 0 | 1 | 0 | 0 | 0 | 0 |
| Other Stone Tools | | | | | | |
| Cores | 1 | 3 | 0 | 3 | 0 | 2 |
| Angular Fragments | 6 | 11 | 4 | 6 | 2 | 3 |
| Flakes | 11 | 18 | 1 | 6 | 3 | 12 |
| Chert Cobbles | 3 | 13 | 0 | 3 | 0 | 0 |
| Fire-Cracked Rock | 4 | 5 | 0 | 4 | 2 | 7 |
| Ferruginous Sandstone | 2 | 0 | 0 | 4 | 3 | 1 |
| Limestone | 0 | 3 | 0 | 0 | 0 | 0 |

TABLE 5. Prehistoric Artifacts from Obion Valley Unit Sites.

[illegible]

TABLE 6. Prehistoric Artifacts from Adams Site Sustaining Unit Sites.

| Artifact Class | FU 24 | FU 78 | FU 79 | FU 81 | FU 82 | FU 83 | FU 87 | FU 88 | FU 89 | FU 90 | FU 91 |
|-----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Ceramics | | | | | | | | | | | |
| Mississippi Plain | 12 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Bell Plain | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| O'Byam Incised | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wickliffe Thick | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Baytown Plain | 93 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Mulberry Creek Cordmarked | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Larto Red | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Unclassified | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Other Fired Clay Artifacts | | | | | | | | | | | |
| Baked Clay Objects | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Daub | 11 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| Chipped Stone Tools | | | | | | | | | | | |
| Projectile Points | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Bifaces | 9 | 0 | 1 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 1 |
| Scrapers | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Hoe Fragments and Flakes | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Modified Cobbles | | | | | | | | | | | |
| Abrader | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gorget | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grinding Stones | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Manos | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Multi-use Modified Cobbles | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Hammerstones | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Other Stone Artifacts | | | | | | | | | | | |
| Cores | 5 | 0 | 2 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 |
| Angular Fragments | 15 | 2 | 6 | 2 | 0 | 43 | 2 | 4 | 0 | 0 | 0 |
| Flakes | 86 | 2 | 4 | 6 | 2 | 179 | 1 | 4 | 2 | 4 | 3 |
| Chert Cobbles | 1 | 0 | 0 | 2 | 0 | 9 | 0 | 1 | 0 | 0 | 0 |
| Fire-Cracked Rocks | 0 | 1 | 1 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 |
| Ferruginous Sandstone | 4 | 0 | 0 | 0 | 0 | 9 | 0 | 1 | 0 | 0 | 0 |

Old Town Red

Red-slipped, shell-tempered ceramics were found only at the Marshall site. The one small rim sherd in the collection exhibits a vertical rim and a flat lip.

Kimmswick Fabric Impressed, var. Marshall

One thick, grog-tempered pan body sherd with exterior fabric impressions was found at the Marshall site.

Wickliffe Thick

Funnel sherds were collected at the Marshall and White sites. The Marshall collection includes one small upper rim sherd from a funnel with an excurve shape and a flat lip. No rims are included in the White site surface collection.

O'Byam Incised, var. O'Byam

Fine paste bowl or plate sherds with interior incised motifs were found only at the White site. No rims occur in the sample.

Baytown Plain, var. Unspecified

Coarse paste ceramics with large grog inclusions and plain exterior surfaces were collected from seven sites. The White site sample includes five rim sherds; another rim was found at 15CE41. The White site sherds are all from jars with vertical rims and flat lips. Measurable rim orifice diameters range between 22-30 cm. The 15CE41 rimsherd is from a jar with a vertical profile and flat lip.

Baytown Plain, var. Mayfield

This variety occurred only at the Marshall site. The survey collection includes three jar rim sherds. Rim shapes are vertical, incurvate, and inslanted, respectively. Lips are flat (2) or rounded (1). The only measurable rim diameter is 18-22 cm.

Mulberry Creek Cordmarked, var. Unspecified

Coarse, grog-tempered sherds with cordmarked exteriors were found at seven sites. Six rims are from the White site. Five of those specimens are from jars with incurvate (2), vertical (2), and inslanted (1) rims. All of the lips are flat. Estimated vessel diameters range from 18-26 cm. Three jar rims have exterior rim folds; another specimen has a cordmarked lip. The collection includes one bowl rim with an excurve shape, a flat lip, and an estimated diameter of 38-40 cm.

Mulberry Creek Cordmarked, var. Sandy Branch

This relatively fine paste variety also occurs at the Marshall site. The collection includes four rims. Rim shapes are inslanting (2 sherds) or vertical (1 specimen); lip shapes are rounded (2) and flattened (1). One specimen has an exterior rim fold that was smoothed after the vessel was cordmarked. A second specimen exhibits a cordmarked loop handle. The single bowl rim in the collection has an everted rim and an inslanting lip that is decorated with incisions placed perpendicular to the lip edge. The bowl's diameter is estimated at 22-26 cm.

Larto Red, var. Unspecified

Coarse paste, grog-tempered ceramics with an exterior slip were found at the White site. No rims are present in the sample.

Larto Red, var. Carlisle

Fine paste, grog-tempered, red-slipped sherds occur in the Marshall site collection. No rims were found.

Yankeetown Fillet

Two body sherds were found at the Marshall site. The sherds have fine, grog-tempered pastes and exterior fillets with incised lines placed at right angles along the fillets.

Unclassified Ceramics

Grit-tempered, plain sherds occurred at three sites and a grit/grog-tempered, plain sherd was found at another site. The latter specimen is a rim with a vertical profile and a rounded lip.

A single cord-impressed, grog-tempered sherd was found at 15CE35. This body sherd has two cord impressions spaced 7 mm apart on an otherwise plain exterior surface.

One grog-tempered body sherd from the White site displays a stamped or punctated decoration.

Other Fired Clay Artifacts

Baked Clay Objects

This artifact class is best known from farther south in the Lower Mississippi Valley where sites such as Poverty Point in northeastern Louisiana have produced considerable numbers of these clay objects. They have been found at Late Archaic-Mississippi period sites in Southeast Missouri (e.g., Lewis 1972, 1982; Williams 1968, 1974). Most of the specimens found during the site survey are fragments, which exhibit convoluted interiors with occasional grit or grog inclusions. One complete specimen was collected at 15FU89. This kidney-shaped object measures 55 mm long. The surface is smooth, but there appear to be finger impressions left from the shaping of the wet clay.

Daub

Small, irregularly shaped fired clay fragments were collected at eight sites.

Chipped Stone Tools

Projectile Points (Figure 4,a-j)

Thirteen projectile points or point fragments were recovered. Table 7 lists the attributes of each artifact.

Madison (Figure 4,a-c) - Three stemless projectile points from the White site are classified as Madison specimens (Scully 1951). Artifacts A and C are made from Purchase Gravel and B is chert from an unknown source. Specimen A has a slightly concave base, and C has a straight base. Two unifacially chipped notches appear to have been fabricated asymmetrically on the margins of artifact C.

Unclassified Projectile Points (Figure 4,d-j) - Specimen D is corner-notched and is missing the proximal end and one lateral margin. The remaining lateral blade margin is slightly excurvate. The base is thinned and heavily ground. A large channel flake scar is present on one face of the blade. The point is manufactured from an unknown banded chert. Specimen E is a Mill Creek chert artifact that has been heavily damaged and is missing most of the blade and shoulders. The stem is slightly expanding and the straight base has been thinned and ground lightly. Specimen F is a Purchase Gravel, side-notched, projectile point with constricted blade margins. The straight base is thinned and slightly ground. The stem of Specimen G is constricted and the stem margins and base are asymmetrical. The banded chert is from an unknown source. Specimen H is a long, expanding-stem point with barbed shoulders and beveled blade margins. The base is broken and it has been reworked into a scraper. The chert source of the specimen is unknown. Specimen I has an excurvate lateral blade margin, barbed shoulders, and a missing base. The chert source appears to be



FIGURE 4. Survey Unit Artifacts: a-j, projectile points; k-l, bifaces; m, ovate preform; n-o, drills; p-r, scrapers; s, gorget.

TABLE 7. Metric and Other Attributes of Projectile Points.

| Specimen | Site Number | Total Length (mm) | Blade Length (mm) | Stem Length (mm) | Blade Width (mm) | Stem Width Blade Junction (mm) | Thickness (mm) | Weight (g) | Heat-Treated | Remarks |
|----------|-------------|-------------------|-------------------|------------------|------------------|--------------------------------|----------------|------------|--------------|-------------------|
| A | 15FU24 | 20* | 0 | 0 | 17 | 0 | 5 | 1.3 | n | Concave base |
| B | 15FU24 | 24* | 0 | 0 | 23* | 0 | 4 | 2.3 | y | - |
| C | 15FU24 | 45 | 0 | 0 | 18 | 0 | 4 | 2.9 | n | Complete |
| D | 15CE25 | 36* | 26* | 10 | 27* | 17 | 8 | 10.5 | y | Corner-notched |
| E | 15FU88 | 35* | 20* | 15 | 37* | 19 | 9 | 12.3 | n | Expanding stemmed |
| F | 15FU83 | 24* | 14* | 10 | 27 | 20 | 9 | 7.3 | y | Side-notched |
| G | 15CE41 | 32* | 17* | 15 | 30 | 27 | 9 | 11.2 | y | Asymmetrical |
| H | 15FU24 | 72 | 58 | 14 | 27 | 14 | 5 | 10.6 | n | Corner-notched |
| I | 15CE27 | 45* | 40 | 5* | 22 | 11 | 5 | 4.6 | n | Corner-notched |
| J | 15CE27 | 70* | 0 | 0 | 30 | 0 | 8 | 17.3 | n | Beveled margins |

* Incomplete measurement

Burlington. Specimen J is a Dover chert point with beveled and slightly serrated, excurvate lateral blade margins. The base is missing.

Projectile Point Fragments

This category includes three proximal fragments of stemmed projectile points. Each specimen lacks diagnostic characteristics that would facilitate their further classification.

Bifaces (Figure 4,k-l)

Three specimens exhibit continuous bifacial chipping on all lateral edges. One Purchase Gravel artifact appears to have been hafted for use as a knife. One of the remaining two complete bifaces is also of Purchase Gravel; the other example is of an unknown chert type.

Sixteen specimens, 12 of Purchase Gravel and four from unknown chert sources, display discontinuous areas of bifacial retouch. Each example has cortex present and all exhibit at least one bifacial working edge.

Ovate Preform (Figure 4,m)

This Purchase Gravel specimen has a maximum length of 44 mm and a maximum width of 35 mm.

Drills (Figure 4,n-o)

Two small, expanding base drills were collected. One specimen has a triangular cross-section and is from an unknown chert source. The second example has a biconvex cross-section and is of Purchase Gravel. Each shows rotary wear striations along the working edges.

Biface Fragments

Thirteen biface fragments, including nine mid-sections and four distal tips, were collected. Three of the mid-sections are of Dover chert, one is of Burlington chert, and the remaining specimens are of unknown chert types. Two of the proximal tips are of Purchase Gravel, one is of Dover chert, and the last specimen is from an unknown source.

Scrapers (Figure 4,p-r)

End scrapers (3 specimens) - One bifacially worked end scraper was manufactured from a large flake of Purchase Gravel. Two other Purchase Gravel flakes exhibit unifacially chipped convex distal ends with steep working edges.

Side Scrapers (4 specimens) - These examples, all of which are of Purchase Gravel, have steep, unifacially retouched working edges along at least one of their lateral margins.

Spokeshaves (3 artifacts) - These unifacial tools have arcuate working edges with steep retouch. Two of these spokeshaves are of Purchase Gravel and the third is of quartzite.

Hoe Fragments and Flakes

Chipped stone hoes were identified by the presence of polished fragments and bit-resharpening flakes. Hoe fragments retain a portion of the bifacially worked tool edge. Hoe flakes lack this characteristic and can be identified only by the presence of use polish. Five fragments and 12 flakes were collected. Two of the fragments and nine hoe flakes are of Mill Creek chert; two fragments and two flakes are of Dover chert; one fragment is of Purchase Gravel; and the remaining specimen, a flake, is from an unknown chert source.

Modified Cobbles

Abrader

One grooved sandstone abrader was collected.

Gorget (Figure 4,s)

A fragment of a drilled slate gorget is highly polished. The specimen exhibits two closely spaced, drilled holes.

Metate

A single igneous/metamorphic cobble has been modified by pecking to produce a large, concave working area.

Grinding Stones

The broad faces of three igneous/metamorphic cobbles show linear striations that resulted from use as grinding implements.

Mano

One fragment of a purposefully-shaped, hand-held grinding stone was collected. The specimen has a rectangular cross-section, a pecked end, and polished surfaces.

Pestle

One end of a 12 cm long igneous or metamorphic cobble exhibits a pattern of use wear that is similar to that of hammerstones.

Multi-use Modified Cobbles

Eleven cobbles display one or more shallow concave depressions. Some specimens also display evidence of use as hammerstones. Most of the specimens are igneous or metamorphic cobbles. There is one example each of chert, conglomerate, and slab sandstone cobbles.

Hammerstones

Three igneous or metamorphic cobbles and one quartzite cobble show battered facets and other use damage along one edge.

Smoothing Stone

One small pebble displays a high polish and linear striations on all sides.

Ground Stone Tool Fragments

Two fragments display polished surfaces, but both are too small to classify further.

Other Stone Artifacts

Cores

Cores are chert cobbles that have been worked to produce flakes for subsequent use. None of the 33 Purchase Gravel cores were prepared. Thirteen specimens were thermally altered.

Angular Fragments and Flakes

Flakes were divided into three classes based upon the presence and extent of cortex on their surfaces. For the purposes of this report, all the flakes have been treated in the tables as one class. A complete breakdown of all flake categories and counts of those that exhibit utilization are given in the appendix.

Chert Cobbles

A total of 33 Purchase Gravel cobbles were recovered.

Fire-Cracked Rock

This category consists of cobbles and pebbles that exhibit fracture planes and other features caused by exposure to intense heat. Fire-cracked rock was recovered from 15 sites and was more common at bluffcrest sites than elsewhere in the study area.

Ferruginous Sandstone

Ferruginous sandstone outcrops along the bluff. It is easily recognized by its reddish orange color, which changes to a purple hue when heated. Excavation evidence suggests it was used in earth ovens and hearths. This artifact class was found at 11 sites and was most common at bluffcrest sites.

Limestone

Limestone was found at three sites, but never in large quantities. There is no apparent pattern in the spatial distribution of this artifact class.

Crinoid Stem

One crinoid stem was collected at a site location that precludes its natural occurrence there. It is unmodified.

Historic Artifacts

Historic materials were collected at 11 sites. Artifact classes include ceramics, glass, metal, bricks, and other objects (Table 8).

Ceramics

Historic sherds were sorted into ware groups that were differentiated on the basis of paste characteristics. These ware groups were further divided into types based on surface finish and decorative attributes.

Refined Earthenware

Refined earthenware clays are normally fired below or just to the point of paste impermeability, and must be glazed to achieve impermeability (Bartovics 1981:194). Whiteware and ironstone are both refined earthenwares, but only whiteware is present in the collections. Plain whiteware fragments were collected at 10 sites. Four decorated types of whiteware were found. These types include one specimen of hand-painted whiteware, three specimens of blue feather-edged

TABLE 8. Historic Artifacts from All Survey Unit Sites.

| Artifact Class | CE 26 | CE 37 | HI 57 | HI 58 | HI 62 | HI 64 | HI 66 | FU 69 | FU 70 | FU 73 | FU 85 |
|-----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Refined Earthenware | | | | | | | | | | | |
| Whiteware (Plain) | 3 | 8 | 2 | 3 | 3 | 0 | 1 | 2 | 7 | 2 | 9 |
| Hand-Painted Whiteware | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Blue, Feathered-Edge Whiteware | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| Machine Stamped-Painted Whiteware | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 2 |
| Transfer Print Whiteware | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Stoneware | | | | | | | | | | | |
| Exterior and Interior Slipped | 26 | 3 | 10 | 6 | 3 | 2 | 0 | 0 | 0 | 2 | 8 |
| Int. Slipped/Ext. Salt Glazed | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 |
| Ext. and Int. Salt Glazed | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| Common Earthenware | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Porcelain | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| Glass | | | | | | | | | | | |
| Container | 37 | 6 | 1 | 9 | 10 | 3 | 0 | 1 | 8 | 2 | 7 |
| Flat Glass | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 |
| Milkglass | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 |
| Metal | | | | | | | | | | | |
| Unidentified Fragments | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| Nails | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Other Artifacts | | | | | | | | | | | |
| Glass Marble | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Doll Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Ceramic Insulator | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bricks | 0 | 0 | * | * | 1 | 13 | 5 | 6 | 6 | 1 | 3 |
| Coal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

* Presence recorded in the field, but not collected.

whiteware, and six specimens of machine-stamped/painted whiteware. The first two decorated types date to the mid to late nineteenth century. The machine-stamped type dates to the twentieth century.

Stoneware

Stoneware vessels are normally fired at moderately high temperatures, which makes them less glass-like than porcelain, but still impermeable to water (Bartovics 1981:173-174). This ceramic ware was collected at all of the historic sites. Differences in surface treatment permit a division of this ware into three groups. Specimens with salt glazed surfaces on both the interior and exterior were collected at two sites and represent the oldest stoneware manufacturing technique. Stoneware with salt glazed exteriors and slip glazed interiors was found at three sites, and represents a type of manufacturing technique that became common after 1860 (Greer 1981:197, 263). Most of the stoneware has slip glazed interiors and exteriors. This technique became dominant after 1875.

Common Earthenware

This ceramic type is usually composed of inferior clays involving no elaborate preparation. They are fired at temperatures that permit the absorption of water and must be glazed to be impermeable (Bartovics 1981). One glazed earthenware fragment was collected and probably dates to the late nineteenth century.

Porcelain

Porcelain is fired at high temperatures and is completely impermeable (Bartovics 1981:173). Three of the porcelain sherds are undecorated. Three painted fragments of a plate were collected at site 15HI62. These specimens appear to date to the twentieth century.

Glass

Container Glass

Container glass was present at all but one of the historic sites. Bottle or jar neck fragments were collected at six sites. All but one of these sherds have screw-type tops and were manufactured by the automatic method, which dates to the twentieth century. One bottle neck from site 15CE37 was manufactured by a semi-automatic method and has a hand-applied lip. This specimen was probably manufactured in the late nineteenth century.

Flat Glass

Clear sherds of window glass were collected at three sites.

Milkglass

Four milkglass fragments were found at three sites. The two specimens from site 15FU73 are fragments of a canning jar lid liner.

Metal

Six miscellaneous metal fragments and two nails were recovered. Both of the nails are of twentieth century manufacture.

Bricks

Brick fragments were found at seven sites and were observed, but not collected, at two additional sites. Most of the fragments appear to be from machine-made bricks. One specimen from 15FU70 displays the linear striations that are typical of handmade or early machine-made bricks of the late nineteenth century.

Miscellaneous Objects

One coal lump, one glass marble, one doll leg and one electric fence ceramic insulator comprise the remaining historic materials.

DISCUSSION

The two survey projects resulted in the archaeological examination of a 1411 ha study region that encompassed several physiographic zones. Fifty-three new sites were recorded. Ten additional new sites were found outside of the boundaries of survey units, and two previously reported sites were revisited. The survey data provide the first reliable estimates of site density and distribution patterns in the Mississippi River counties region of western Kentucky. The design of the main survey permits a comparison of site parameters across physiographic zones. The pilot project results are less amenable to such comparisons, but do provide additional information on the variability of site locations. The overall results have important implications for research and preservation planning.

Site Density Estimates

The main survey density estimate of 3.4 sites per square km is slightly lower than the density estimate of the pilot survey, but the difference is due mainly to the absence of sites in the Clinton Uplands unit and the site discovery biases of shovel testing as an archaeological survey technique. The density estimates for the Berkley Bluff, Obion Valley, and Adams Sustaining units are relatively similar. However, the site density estimate for the Berkley Bluff unit is probably underestimated. Most of the surveyed area in this unit required shovel testing. The pedestrian surveyed portion of the Berkley Bluff unit yielded a site density estimate of over 20 sites per square km. This estimate for pedestrian survey is much higher than similar estimates in other units. Even allowing for biases in the locations of plowed fields, this suggests that the Berkley Bluff site density may actually be significantly higher than the other survey units.

The absence of sites in the Clinton Uplands unit indicates a low incidence of use of interfluvial zones. The high density of sites recorded in the pilot survey for this zone suggests that considerable variation exists for site locations in the interfluvies. The pilot survey transect in this zone is situated much closer to the bluffcrest and in closer proximity to major streams. The relative abundance of natural resources in those two zones undoubtedly influenced the site location preferences of the prehistoric inhabitants of the region.

Finally, there is a wider range in site distributions in the Berkley Bluff and Adams Sustaining units than in the Obion Valley unit. Sites are situated on bluff remnants, extinct natural levees, and at the bluff base in the Berkley Bluff unit. Site locations in the Adams Sustaining unit are about equally divided between the terraces of Bayou de Chien and upland ridges. In the Obion Valley unit all but two sites are located on upland ridges or knolls overlooking the valley. The remaining two sites occur on terraces in the creek valley.

Site Diversity Estimates

The located sites vary greatly in their characteristics. Site size estimates range from less than 0.1 ha to over 50 ha, and there are considerable differences in the density and diversity of material remains. Comparisons between the units reveal that the physiographic zones were utilized differentially by the prehistoric populations of the region. The significance of these locational patterns is difficult to assess, however, due to the sample size and the effects of ground cover on the ability to locate sites and collect material samples.

Site characteristics in the Obion Valley unit display less variation than in the Berkley Bluff or Adams Sustaining units. Obion Valley sites are generally small; the largest location has an area of only 1.1 ha. The density and diversity of artifacts are also low at these sites. It is inferred from these data that prehistoric utilization of this zone was primarily by small task groups for short periods, perhaps seasonally.

The Berkley Bluff and Adams Sustaining units also contain small sites that are inferred to represent short term occupations by small groups. However, in each of these units there are sites, including Indian Camp Lake, White, 15CE41, and 15FU83, that were intensively occupied by large groups for long intervals. They vary in size from 2 ha to over 50 ha, and at each location there is a dense surface scatter of material that includes diverse artifact classes. These large sites range in age from the Late Archaic through Mississippi periods, and multiple components can be delineated at each site except for 15CE41. These sites are all situated near the upland/valley ecotone and it is inferred that this was a preferred zone for long-term settlements.

The pilot survey results generally agree with this perspective of limited locations for permanent settlements. The Marshall site is situated on the bluffcrest and represents another large site occupied for a long period of time. The sites located in the interfluvial transect and most of the sites in the tributary stream transect are small, probably seasonal occupations. However, there are three site locations in the tributary stream transect that, although small in size, appear on the basis of artifact diversity to be long term occupations. All of these sites date to the Woodland periods. The presence of these sites suggests that there is some variability across the landscape in terms of locational preferences for long term occupations.

Mississippian Settlements

It is widely assumed that the basic spatial organization of Mississippian communities was hierarchical. Settlements functioned for different purposes, and settlement types and their density differed between regional populations. Documenting the range of settlement variability exhibited by Mississippian groups and interpreting those patterns in cultural terms are important UIUC Western Kentucky Project research objectives.

The Mississippian settlement pattern in the Ohio-Mississippi rivers confluence region has been based primarily upon data from the Cairo Lowland (Cottier 1977a; Cottier and Waselkov 1977; Lewis 1974). The Cairo Lowland pattern is typical of Mississippian settlement patterns in floodplain environments. A settlement hierarchy exists and is composed of a few towns and many small villages or hamlets. These sites are generally situated along extinct natural levees. The survey results reported here provide a different perspective since this study was focused specifically on landforms other than the Mississippi Valley. The study results demonstrate that settlement patterns along the bluffcrest and in the interior uplands differ significantly from that described for the floodplain.

Both survey projects included an examination of the density and distribution of Mississippian sites in the vicinity of late prehistoric towns. The Bluff Transect of the pilot project centered on the Turk site, and one of the main survey units focused on the Adams site. The remaining surveyed areas provide additional information on the range of Mississippian site types and their locations. A total of seven sites with Mississippian components were identified in the 1411 ha that were examined. Two of the seven Mississippian sites, Marshall and White, are relatively large villages. Marshall is situated on the bluffcrest north of Turk and covers an estimated 8 ha. The main occupation dates to the James Bayou phase (A.D. 900-1100), and is older than the major occupation at Turk. The White site occupies an upland ridge overlooking the floodplains of the Mississippi River and Bayou de Chien. The site area covers 4.5 ha and the occupation dates to the Medley phase (A.D. 1300-1500), when the nearby Adams site was also intensively occupied.

Four of the remaining Mississippian sites are small, and are best described as hamlets. Given the small quantity of debris collected at each of those locations, the occupations cannot be assigned to a phase. Three of the sites are located in the Adams Sustaining Area Unit, and the fourth is in the Obion Valley Unit. The final site with a Mississippian component, Indian Camp Lake, is situated on an extinct natural levee in the Berkley Bluff Unit. The Mississippian component appears to cover only a small portion of this large site. There is evidence for a James Bayou phase component, and other late prehistoric components may be present as well.

This pattern of Mississippian settlement differs from that in the Cairo Lowland and in the alluvial bottoms southwest of Hickman (Kreisa 1987). The major distinctions are a different emphasis on locational preferences and a different level of nucleation of settlements, all of which strongly reflect the geographical characteristics of those regions.

The Mississippi floodplain is narrow from Wickliffe to Hickman and it may have been even more narrow during the Mississippi period (Fisk 1944). Available evidence suggests that local Mississippian populations tended to select settlement locations along the adjacent bluffs or uplands rather than construct their major villages in the floodplain. Several factors encouraged this selection strategy. First, the elevation of these areas precluded seasonal flooding. Second,

agricultural fields along the bluffs may have provided another major cropping locality. The loess soils of the bluffs are broadly similar to the silt loams and sandy loams of the levees. These soils would have been easily worked with Mississippian agricultural tools and are highly productive. Although they lack the opportunity for periodic soil replenishment by flooding that the levees receive, historic farmers found that by practicing a crop rotation the yield of maize along the bluffs was similar to that from the bottomland soils. Mississippian farmers could have employed a short fallow system on these soils, while still cropping the adjacent bottomland. Finally, the heavily dissected nature of the bluffs provided naturally defensible locations for sites that, even if they were not stockaded, would have been difficult to attack successfully.

The Mississippian settlement pattern in the study region displays a high degree of nucleation. Towns and large villages were relatively common, and they appear to have contained the bulk of the population. Hamlets or farmsteads were present, but the total population of these sites was small. The reasons for this nucleated pattern are unclear. It was possibly fostered by a relatively high incidence of warfare, but the material evidence of conflict is no greater in the study region than elsewhere in the Mid-South. It is also possible that the nature and organization of the bluff settlements differed from that of otherwise comparable floodplain settlements in the Cairo Lowland across the Mississippi River. Small hamlets scattered along the bluff may have been no more efficient in resource exploitation than a few larger villages especially when these villages were placed near streams or bayous. Placement near waterways would provide ready access to a wider variety of resource zones than one would encounter in the bayous, sloughs and oxbow lakes of the Cairo Lowland. Many of the large Mississippian sites in the study region (e.g., Adams, White, McLeod Bluff, Turk, Marshall, and Burcham (15FU15)), are located in such settings.

PART II:

TEST EXCAVATIONS AT SELECTED SITES

EXCAVATION DESIGN AND METHODOLOGY

Three sites, Marshall, White, and Indian Camp Lake, were selected for test excavations. These excavations were designed to determine site deposition patterns; to interpret the human use or uses of each location; to collect organic remains for absolute dates, environmental reconstruction, subsistence pattern analyses, and site seasonality determinations; and to provide the data necessary for the preparation of National Register nomination forms for each site. This part of the report describes the results of those investigations.

Methods

The plowzone was removed as a level and was not screened. Beneath the plowzone, excavation proceeded in arbitrary 10 cm levels within natural strata. Each level was screened through 6 mm hardware cloth. Flotation samples of 10 l were removed prior to screening from most levels and selected features. Preliminary sorting and cataloging of artifacts took place at the field laboratory in Carlisle County and on the University of Illinois campus. Methods employed during analysis are described in each appropriate section.

Radiocarbon age estimates were provided by the Illinois State Geological Survey (ISGS) laboratory located at the University of Illinois at Urbana-Champaign. All dates have been calibrated by the CALIB (Version 2.0) program using the ATM20.14C bidecadal calibration curve dataset (Stuiver and Reimer 1986). No laboratory error multiplier was included in the calibration. The calibrated age(s) are reported in parentheses for each age estimate and are bracketed by the 1 sigma extreme values. Cases for which there are more than three calibrated ages were truncated to the oldest and youngest ages and the median of the remaining ages.

THE MARSHALL SITE

Site Description and Setting

The Marshall site (15CE27) is located on the Mississippi bluffs about 10 km south of the confluence of the Ohio and Mississippi rivers, and 1 km south of Mayfield Creek. The present Mississippi River channel is 1.5 km to the west, but it formerly flowed closer to the Kentucky bluffs (Fisk 1944:Plate 2). The bluffs are deeply dissected into spurs and ridges that are separated by steep ravines. The soil is a silt loam of the Memphis-Loring series (cf. Humphrey 1976). The site is currently in pasture and is surrounded by a beech-tulip forest, which covers the loess bluffs across most of western Kentucky (Davis 1923; Lewis 1974).

The site covers at least 8 ha, and includes two parallel ridges and a knoll at the point where the ridges connect (Figure 5). Two low mounds, each of which measure less than 1.5 m high, are situated along the bluffs. A third mound, located on the northwest portion of the knoll, was destroyed approximately a decade ago.

Shovel tests and soil probes revealed considerable variability in the intensity of occupation at the site. Midden depths of over 70 cm exist around the edges of the knoll, and extend short distances along the ridges to the north. Midden deposits of 30 to 50 cm occur on the ridges, while in the central knoll area, the deposits are approximately 30 cm deep. The shallow midden in the latter locus contrasts with the deep midden that surrounds it and this may indicate a plaza location.

Horseshoe-shaped rises occur in the southwest and east-central portions of the site. Each of these features are 20 to 30 cm high and approximately 15 m long. Given their placement on ridge spurs at the site boundaries, these rises may indicate the remains of possible fortification lines. Another possible fortification feature is situated along the southern boundary of the site. This shallow depression runs east-west and holds water consistently longer after rains than the surrounding ground. Soil probes also indicate an abrupt change in midden depth with little or no midden delineated to the south of this line. Both of those characteristics are consistent with the inference of a sharply delineated village midden boundary.

Two other prehistoric sites are located within 1 km of Marshall. The Turk site is on an isolated bluff spur to the south of Marshall and site 15CE25, an Early Archaic site with a later component of unknown age, lies to the southwest. Turk has been investigated by Loughridge (1888), Moore (1916), and Edging (1985). The results of Edging's investigation, which are the most extensive to date, suggest that the major occupation at Turk occurred between A.D. 1050-1300.

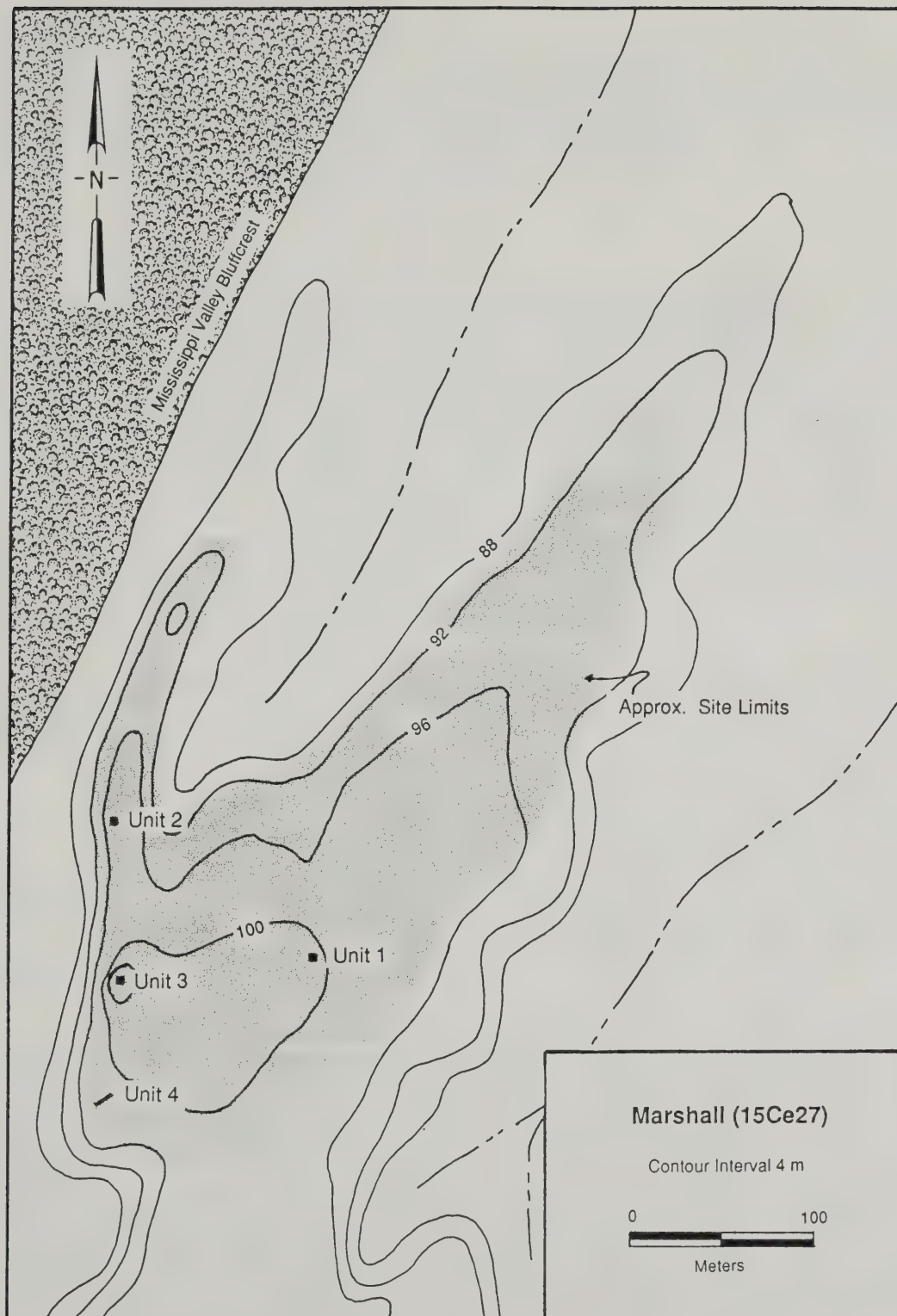


FIGURE 5. Topographic Map of the Marshall Site.

Excavations and Stratigraphy

Three 2 m² test units and one unit that measured 5 X 0.75 m were excavated in 1985. Units 1 and 4 were supervised by the senior author, while Units 2 and 3 were excavated by the University of Illinois field school under Lewis' direction. This section describes the excavation results and interprets the site's depositional history.

Unit 1 (S16-18, E0-2)

This test excavation was located on the east-central portion of the knoll (Figure 5). It was selected for excavation because soil probes indicated the presence of a deep midden in this area and ceramics from shovel tests included a wide range of ceramic types. A brown (10YR4/3) silt loam comprised the plowzone, which varied between 16 to 20 cm deep (Figure 6). This zone had been disturbed in the northwestern portion of the unit by the recent repair of a waterline. Beneath the plowzone was a dark yellowish-brown (10YR4/4) silt loam midden that extended to 34-40 cm below ground surface. A probable house basin (House Basin 1) was recorded in this zone in the southern portion of the unit. A number of artifacts were piece-plotted in this area, and the south vertical profile revealed a basin-shaped feature. No construction features could be detected within the midden.

The third stratigraphic zone extended to 70 cm below surface. It consisted of a dark brown (10YR3/3) silt loam, mottled with dark yellowish-brown (10YR4/4) clay. This zone is interpreted as a house basin (House Basin 2) that was filled with trash and dirt. A sample of wood charcoal from the basin fill was dated to A.D. 1027 (1160) 1221 (ISGS 1505; 900 \pm 70 BP). A single wall trench (WT 1) associated with this basin was detected at 70 cm below surface and extended to 98 cm below surface. The house basin fill had been disturbed in the southwestern corner of the unit by the excavation of a pit (Feature 11) that was sealed by the uppermost midden level. Wood charcoal from Feature 11 was radiocarbon dated to A.D. 780 (886) 969 (ISGS 1504; 1160 \pm 70 BP).

The final stratigraphic level consisted of a 10 cm thick, brown (10YR3/3) silt loam, heavily mottled with dark yellowish-brown (10YR4/4) clay. It is interpreted as the fill of an older house basin (House Basin 3), the upper portion of which had been disturbed by the construction of House Basin 2. At the base of this level (80 cm below surface), three lines of postmolds were delineated, as well as unaligned postmolds and one feature (Figure 7). The postmold lines were part of an older construction episode than the wall trench. The single-set post structure measured 2 m in width and was placed in a 30 cm deep basin. Although the southern wall of the structure was not uncovered, the minimum length of the structure can be estimated at 2.6 m. This inference is based upon the distance between the north post line of the structure and the southwest corner of the unit where the basin fill was observable in the wall profiles. The posts that formed the walls were pointed, averaged 7 cm in diameter, and extended

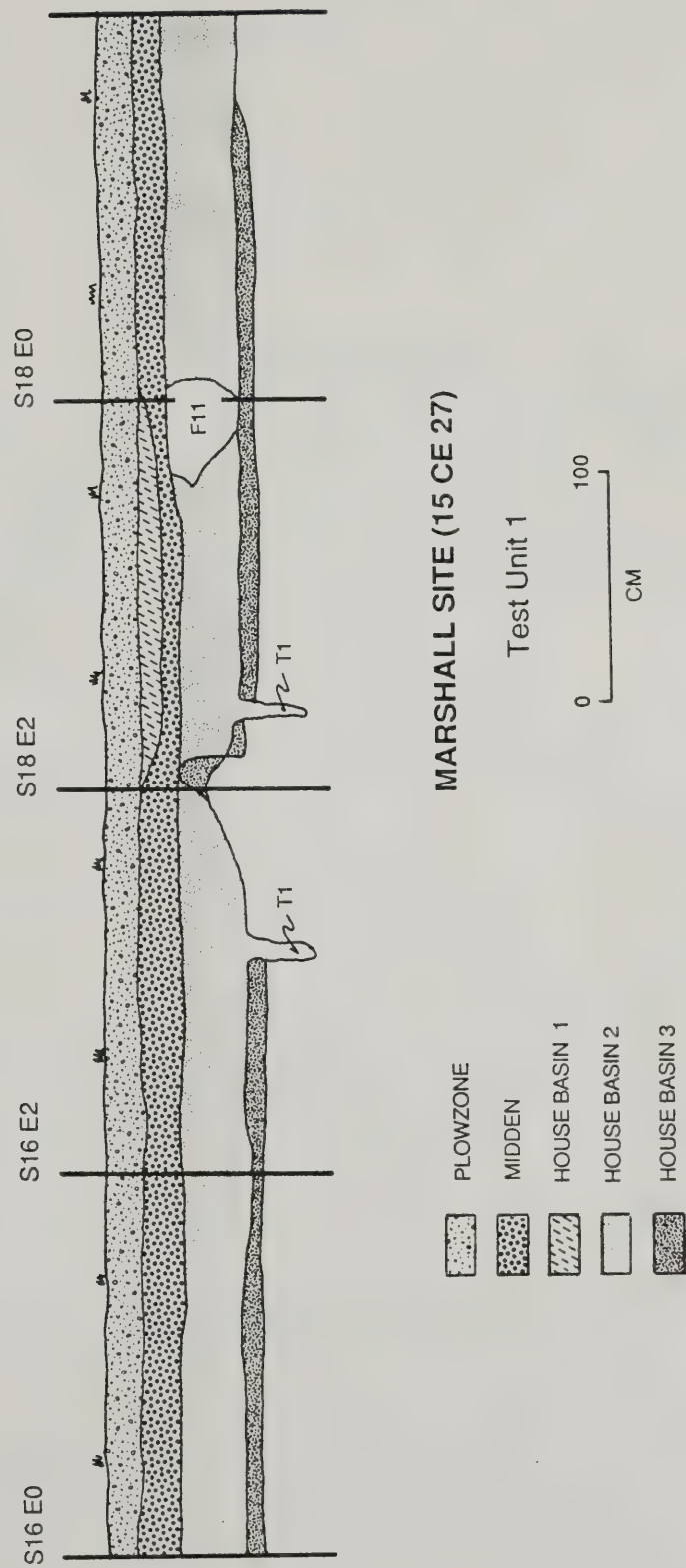


FIGURE 6. Vertical Profile of Unit 1.

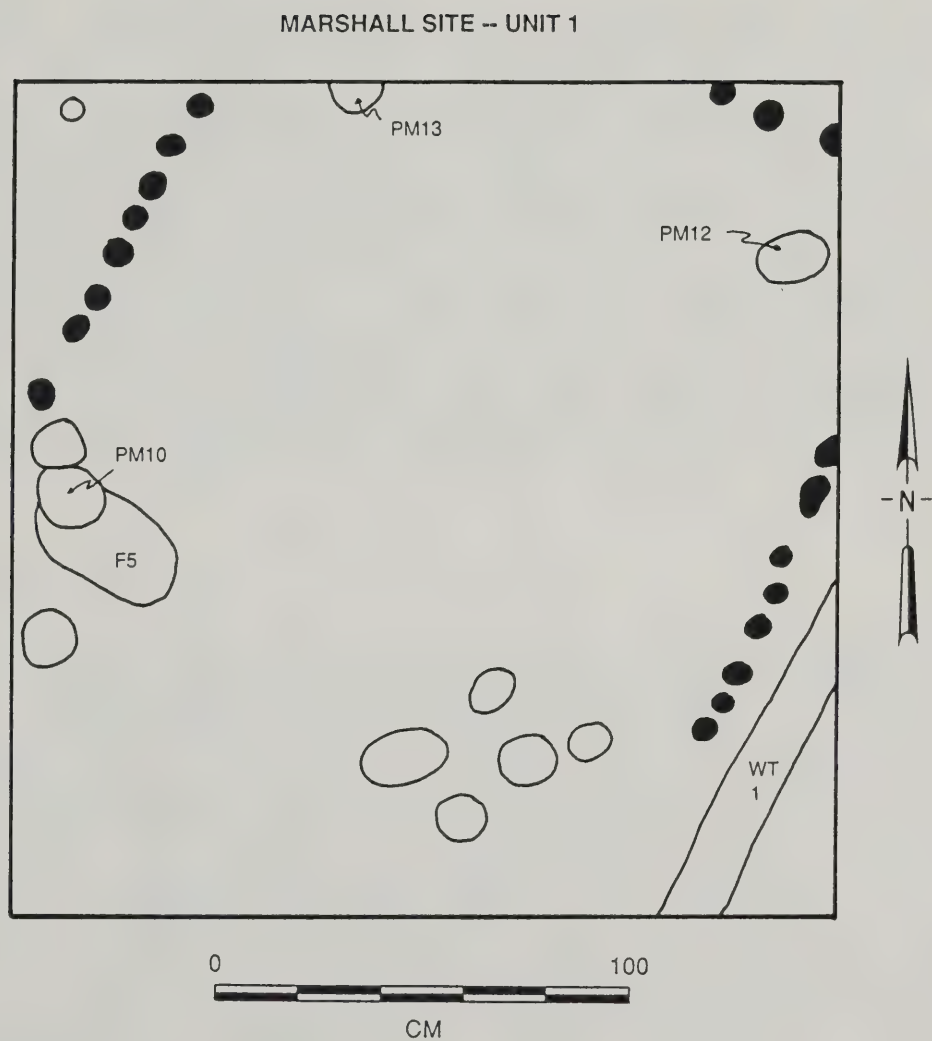


FIGURE 7. Horizontal Plan of Unit 1 Features.

an average of 10 cm below the basin. Twelve additional postmolds were recorded within the unit, but cannot be assigned confidently to either construction episode. By their position and size, Postmolds 12 and 13 are interpreted as interior support posts for one of the building episodes. Interior corner support posts occur in single-set post structures of similar age at the Hoecake site in the Cairo Lowland (Williams 1974). Feature 5, located along the east line of postmolds, was oval in plan with a rounded bottom. It extended to 1.28 m below surface. Postmold 10 was superimposed on this feature. Based on the shape and contents of Feature 5, it is interpreted as a post pit associated with House Basin 3.

In summary, the oldest occupation evidence in this unit is the remains of a single-set post structure in a shallow (40 cm) basin. A more recent wall trench structure in a 30 cm deep basin was constructed at the same orientation as the older building. The wall trench structure was apparently larger since only one of the wall trenches was exposed in comparison to three walls of the older structure. Later, a pit that was excavated in the southwest corner of the unit disturbed the house basin fill. A third probable house basin also occurs in the southern portion of the unit. It superimposes the pit and the two older house basins. All of these zones were sealed by a final occupation that produced the uppermost midden. Taken together, the deposits clearly span a considerable interval of time. A wide range of ceramic types occur in the unit and high frequencies of cordmarked and red-slipped sherds are present. Grog-tempered ceramics dominate the collection, but shell-tempered types increase in frequency in the upper levels.

Unit 2 (N76-78, W117-119)

This unit was placed along the bluffcrest on the west ridge (Figure 6). Soil probes in this area had revealed three patches of 40-60 cm thick midden, which were separated from one another by shallow midden that was about 25-30 cm thick. From south to north, these three areas were spaced 3 and 6 m apart, respectively. The southernmost of the thick midden patches was selected as the location of a test excavation (Unit 2) to determine the nature of this patterned change in midden depth. The plowzone was 15-18 cm thick and was a dark yellowish-brown (10YR3/4) silt loam (Figure 8). Two zones of burned earth occurred just beneath the plowzone, and are interpreted as the remains of a living floor for which no construction features were observable. The remainder of the unit's stratigraphy consisted of a dark yellowish-brown (10YR3/4) clay loam that extended to 75 cm below surface. This zone represents the fill for a 40 cm deep basin of a single-set post structure. A line of posts, oriented north-south, was delineated at 75 cm below surface (Figure 9). This row of postmolds appears to mark the west wall line of the structure. The postmolds averaged 10 cm in diameter, extended to 84-98 cm below surface, and had rounded bottoms.

A circular smudge pit, Feature 6 (Figure 9), which measured 20 cm in diameter, was defined at the bottom of the house basin. The pit

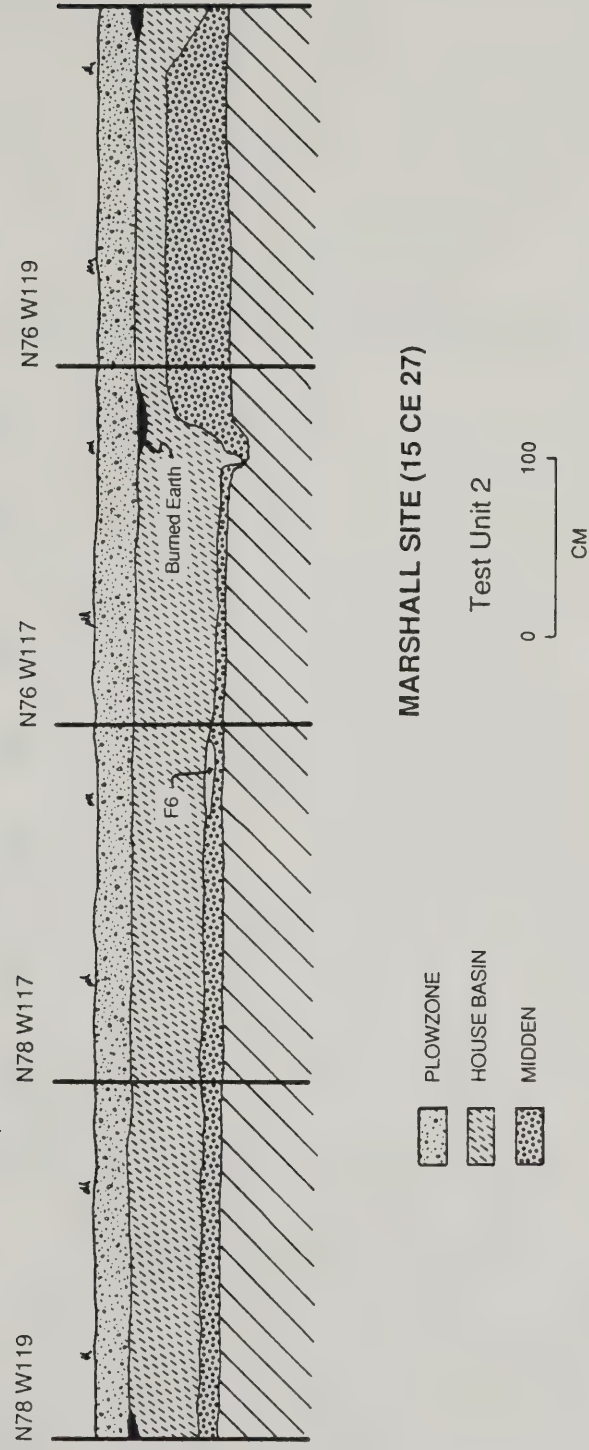


FIGURE 8. Vertical Profile of Unit 2.

MARSHALL SITE -- UNIT 2

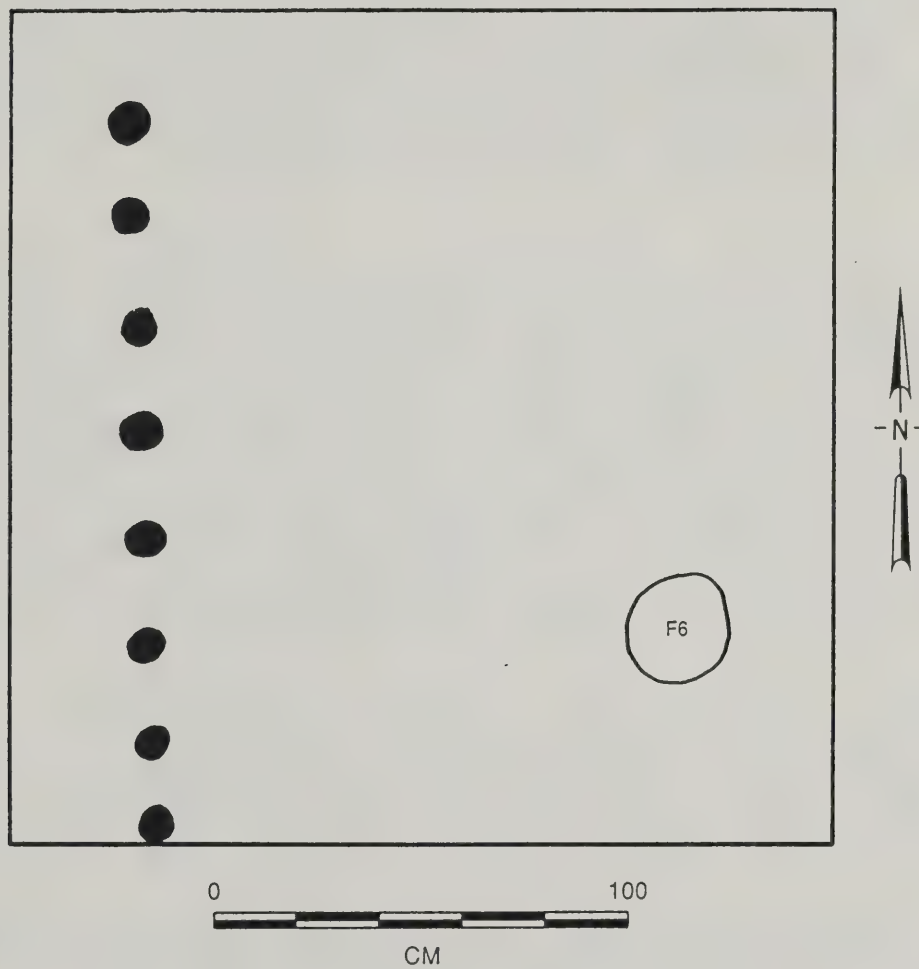


FIGURE 9. Horizontal Plan of Unit 2 Features.

had two delineable deposition zones. The top layer was 4 cm thick and contained burnt ferruginous sandstone. Beneath this was a 5 cm thick zone of carbonized maize cobs, cane, and wood. A sample of the maize cobs was radiocarbon dated to A.D. 1021 (1058, 1125, 1156) 1221 (ISGS 1435; 910 \pm 80 BP; corrected for isotopic fractionation).

In summary, this unit revealed a shallow midden with a possible house floor that overlay a filled house basin. The basin structure had been constructed with single-set post walls. One interior feature, identified as a smudge pit, was recorded. Few material remains were present within the unit. This, along with the stratigraphic information, suggests that the occupation at this locus was less intensive than in the Unit 1 vicinity. Ceramics from the unit are primarily shell-tempered plainwares, and it is inferred that the house basin fill is comparable in age to the upper levels of Unit 1.

Unit 3 (S33-35, W92-94)

This unit was placed to investigate the low mound on the west side of the knoll along the bluffcrest (Figure 6). The excavation revealed a complex depositional history that included numerous construction episodes (Figure 10). The plowzone was a brown (10YR4/3) silt loam that extended to a depth of 18-20 cm below surface. Beneath this was a dark brown (10YR3/3) silt loam midden. A circular wall trench (WT 2), measuring 40 cm in width, was delineated in the southwestern corner of the unit at 45 cm below surface. Approximately one-fourth of this structure was exposed in the unit (Figure 11). A wood charcoal sample from the wall trench was radiocarbon dated at A.D. 1182 (1252) 1275 (ISGS 1507; 790 \pm 70 BP), and provides a minimum age estimate for the building.

In the northern portion of the unit, a grayish brown (10YR4/3) silt loam zone (Figure 11) was interpreted as the fill of a house basin (Feature 7), which extended to 1.1 m below surface. Wall Trenches 3 and 4 are associated with the basin; these trenches were 10 and 15 cm wide, respectively. They may represent the southern wall(s) of the structure.

Beneath the circular structure were the remains of perhaps three older building episodes, as suggested by Wall Trenches 5, 7, and 9 (Figure 11). The building episode associated with Wall Trench 5 is superimposed on those associated with Wall Trenches 7 and 9.

The north and east vertical profiles of this test unit (Figure 10) exhibited thin lenses of irregular shape that varied in color from dark yellowish-brown (10YR4/4) to grayish brown (10YR4/3) to orange brown (2.5YR4/4). The size and color of these mottles also varied within each lens. This pattern can be interpreted as basket loads of earth that were dumped to build the low mound, or the backdirt from the excavation of one of the house basins.

In summary, the unit revealed a complex superpositioning of construction episodes. Based upon the wall trench building styles and

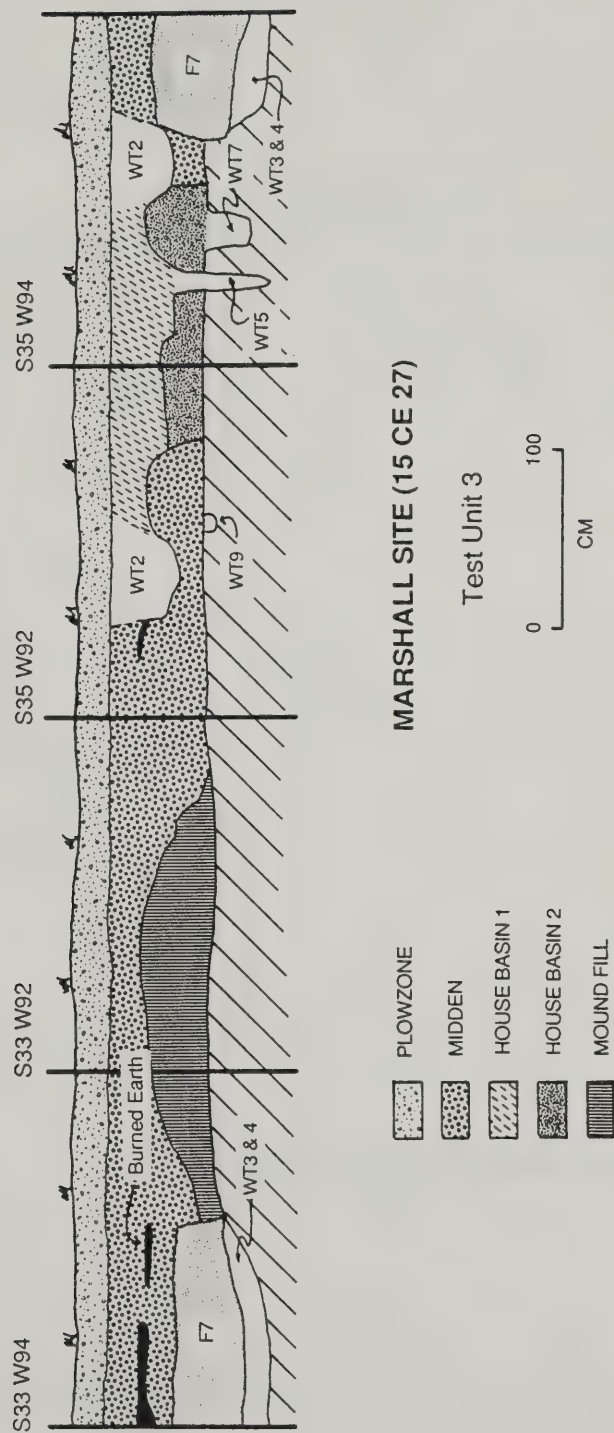


FIGURE 10. Vertical Profile of Unit 3.

MARSHALL SITE -- UNIT 3

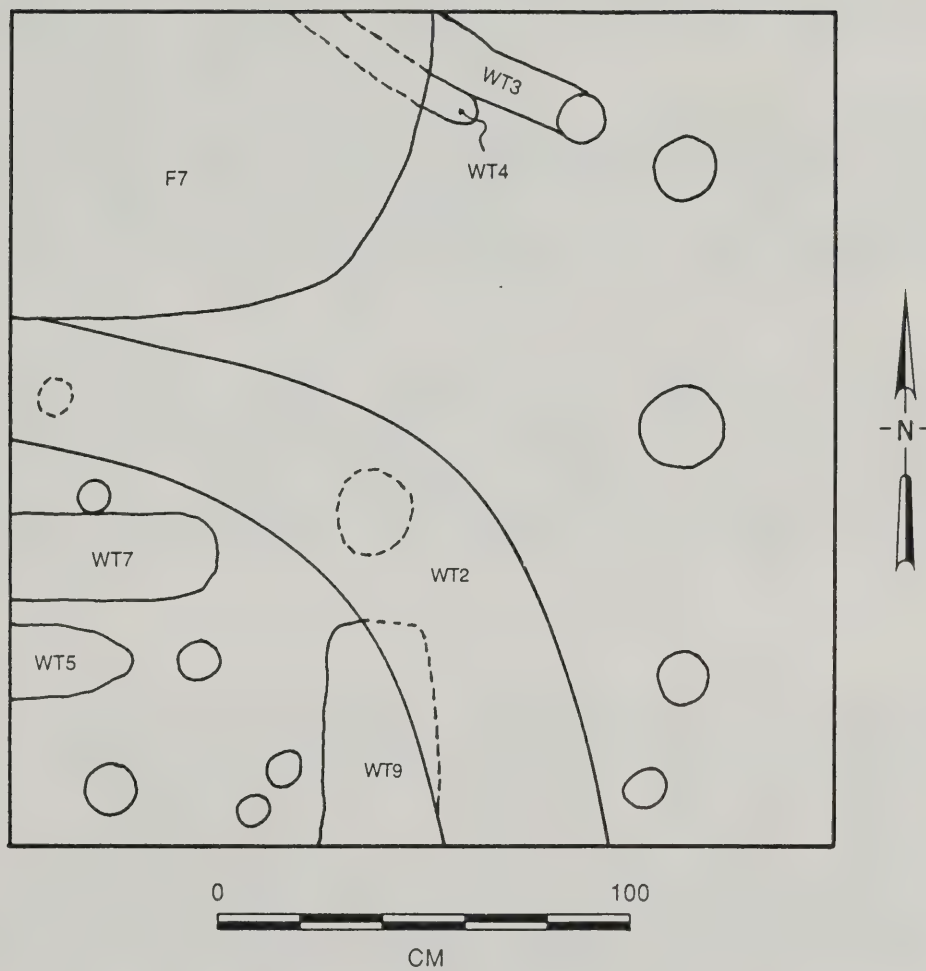


FIGURE 11. Horizontal Plan of Unit 3 Features.

associated ceramics, which are predominantly shell-tempered, it is inferred that the buildings were constructed late during the site's occupational history. The low mound seems to have been purposefully constructed, although it may also have accumulated through the use of the locus for multiple construction activities.

Unit 4 (S80.00-80.75, W100-105)

This trench explored the low, horseshoe-shaped rise in the southwest portion of the site (Figure 6). The excavation measured 5 m east-west and 0.75 m north-south, and was oriented perpendicular to the northwest end of the arcuate-shaped earthwork.

The plowzone was a grayish brown (10YR4/3) silt loam that averaged 20 cm in depth east of the rise and 10 cm deep west of the rise. Below the plowzone, a light brown (10YR4/4) midden occurred east of the rise, while sterile, yellowish-brown (10YR3/4) clay loam was encountered to the west. At 35 cm below surface, sterile soil was encountered throughout the unit. No features or postmolds were identified at the base of the unit.

This trench provides limited information on the nature of the rise. The exact aboriginal function, or use of this locus has not been determined, but it definitely marks the southwestern site boundary. The two horseshoe-shaped rises at Marshall, and similar ones at Turk (Edging 1985), remain interpretive problems. There are few artifacts associated with these features. The ceramics are primarily grog-tempered plainwares.

Discussion

The excavation units revealed deep cultural deposits in three of the tested locations. Each unit also provided a different perspective of the site's occupational history. In Units 1, 2, and 3 the bulk of the deposits were house basin fills. The oldest structures in Units 1 and 2 were single-set post houses. In Unit 1 a wall trench structure replaced the single-set post structure. Several wall trench buildings, the most recent one of which was circular in plan, had been constructed in the locality tested by Unit 3. No house basins were detected in Unit 4, the test trench, nor were other features delineated in that unit.

The excavated portions of the site include Cane Hills, James Bayou, and Dorena phase components. The site occupation span is inferred to have been from A.D. 850-1250. Based on stratigraphic evidence and associated absolute age estimates, the ceramic assemblage changed considerably during those centuries. The oldest excavated context occurs in the lower levels of Unit 1, and the associated ceramics are primarily grog-tempered and often have cordmarked or red-filmed surfaces. Unit 3 and the uppermost levels of Unit 1 are the most recent deposits, and the associated ceramics are mainly shell-tempered plainwares. Units 2 and 4 span the middle portion of the occupation.

Cultural Remains

Ceramics

All sherds were classified into types and varieties on the basis of paste, temper, and surface treatment. Sherds larger than 1.2 cm were separated into body and rim sherds for further analysis. Rim sherd analyses focused on lip, rim, and decorative attributes. The excavated collection comprises 1765 sherds that are larger than 1.2 cm, of which 75 sherds are rims (Table 9).

Insofar as it is possible to do so, pottery type nomenclature follows Phillips (1970) and Phillips et al. (1951). Due to the age of the Marshall site deposits and the location of the site in the extreme northern portion of the Lower Mississippi Valley, the ceramic assemblage contains sherds that differ from published descriptions of established types or varieties. As a result four provisional varieties were defined during this analysis. Specifically, new varieties are described below for the Baytown Plain, Mulberry Creek Cordmarked, Larto Red, and Kimmswick Fabric Impressed types. The rationale for defining these varieties and the sorting criteria are discussed under the respective type headings and in a concluding section of this report.

Mississippi Plain (Figure 12,a-f)

Coarse paste, shell-tempered plainwares account for 23% of the assemblage. A combination of grog and shell temper occurs in some sherds. The pastes of the grog/shell-tempered sherds are more compact than when shell is the sole tempering agent.

Vessel forms are jars and bowls with jars being more common. General characteristics of each form are described below. The number in parentheses following each form name is the number of rims sharing that form. Table 10 lists the rim diameter medians and ranges of each form.

Jars (13) - The median rim diameter of 22-26 cm is slightly larger than the 18-22 cm median reported by Lewis (1982:21,59) for comparable Cairo Lowland material, and the 14-18 cm median of the Adams site assemblage (Lewis and Mackin 1984:33-34). Rims have predominantly incurvate shapes (9), but everted (3) and inslanted (1) shapes also occur. Lips are flat (8), rounded (4), or inslanted (1). There are few appendages. One specimen has a simple lug, and one body sherd displays the attachment location for a loop handle.

Bowls (4) - These examples are similar in size to reported collections (Lewis 1982; Lewis and Mackin 1984:33-34). Two examples have vertical rim shapes; single examples of excurvate and flared rims also occur. Lips are flat (2), rounded (1), or pointed (1). One rim has a simple lug.

TABLE 9: Proveniences of Marshall Site Ceramics and Other Fired Clay Artifacts.

| Artifact Class | Excavation Unit | | | | Totals |
|--|-----------------|-----|------|----|--------|
| | 1 | 2 | 3 | 4 | |
| Ceramics | | | | | |
| Mississippi Plain | 129 | 25 | 252 | 6 | 412 |
| Bell Plain | 53 | 8 | 112 | 4 | 177 |
| Matthews Incised, <u>var. unspecified</u> | 5 | 0 | 0 | 0 | 5 |
| Old Town Red | 45 | 6 | 17 | 0 | 68 |
| Varney Red | 2 | 0 | 0 | 0 | 2 |
| Kimmswick Fabric Imp. <u>var. unspecified</u> | 8 | 5 | 5 | 0 | 18 |
| <u>var. Marshall</u> | 68 | 1 | 2 | 1 | 72 |
| Crosno Cordmarked | 18 | 0 | 2 | 0 | 20 |
| Wickliffe Thick | 6 | 0 | 7 | 0 | 13 |
| Baytown Plain, <u>var. Mayfield</u> | 473 | 16 | 140 | 22 | 651 |
| Mulberry Creek Cm. <u>var. Sandy Branch</u> | 230 | 3 | 8 | 0 | 241 |
| Larto Red, <u>var. Carlisle</u> | 73 | 3 | 7 | 0 | 83 |
| Yankeetown Incised | 1 | 0 | 0 | 0 | 1 |
| Other Unclassified | 1 | 0 | 1 | 0 | 2 |
| Other Fired Clay Artifacts | | | | | |
| Sherd Disks | 1 | 1 | 0 | 0 | 2 |
| Daub | 107 | 226 | 2313 | 20 | 2666 |

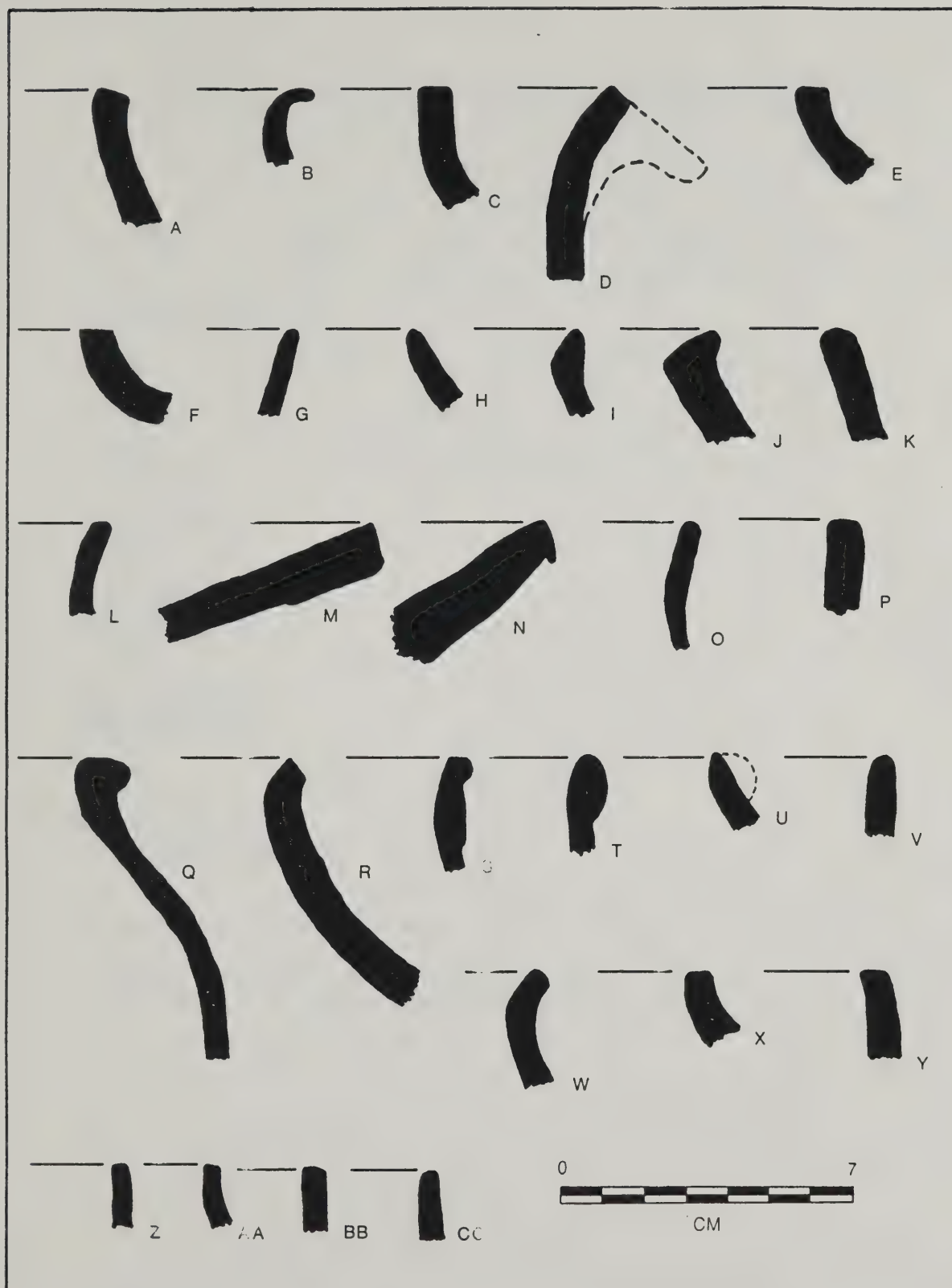


FIGURE 12. Rim Profiles: a-f, Mississippi Plain; g-k, Bell Plain; l, Old Town Red; m-n, Kimmswick Fabric Impressed, var. Marshall; o-p, Crosno Cordmarked; q, Wickliffe Thick; r-y, Baytown Plain, var. Mayfield; z-cc, Mulberry Creek Cordmarked, var. Sandy Branch.

TABLE 10. Median and Range Sizes of Marshall Site Vessels*.

| Type Name | # of Rims | Rim Diameter in Cm | | | | | | |
|---|-----------|--------------------|---------------|----------------|----------------|----------------|-----|--|
| | | 2-6 | 12-14 6-10 | 18-22 14-18 | 26-30 22-26 | 34-38 30-34 | >38 | |
| Mississippi Plain | | | | | | | | |
| jar | 13 | A-----M-----B | | | | | | |
| bowl | 4 | M-----B | | | | | | |
| Bell Plain | | | | | | | | |
| jar | 7 | A-----M-----B | | | | | | |
| bowl | 8 | A-----M-----B | | | | | | |
| Old Town Red | | | | | | | | |
| bowl | 2 | A-----B | | | | | | |
| Kimmswick Fab. Imp., <u>var. Marshall</u> | | | | | | | | |
| pan | 6 | A-----B | | | | | | |
| Baytown Plain, <u>var. Mayfield</u> | | | | | | | | |
| jar | 8 | A-----M-----B | | | | | | |
| bowl | 5 | A-----M-----B | | | | | | |
| Mulberry Creek Cm., <u>var. Sandy Branch</u> | | | | | | | | |
| jar | 8 | A-----M | | | | | | |

A= smallest, B= largest, B-A= range, M= median

* Vessel forms and types which occur in only one size are excluded from the table, but are discussed in the text.

Bell Plain (Figure 12,g-k)

Fine paste plainwares constitute 10% of the ceramic assemblage. The vessel forms include bowls, jars, plates, and a necked bottle in that order of frequency. Temper varies from fine shell to fine grog, and may include a mixture of both aplastics. Surfaces are well smoothed or polished.

Jars (7) - These are slightly smaller than Mississippi Plain jars (Table 10). Rims are inslantanted (3), incurvate (2), constricted (1), or flanged (1) in shape. Lips are rounded (3), flat (2), pointed (1), or thickened (1). No appendages or decorations occur.

Bowls (7) - As with jars, the bowls are generally smaller than Mississippi Plain bowls (Table 10). Most specimens have vertical rim shapes (6), but one angled rim is present. Lip shapes vary considerably; rounded (2), flat (2), pointed (1), inslantanted (1) and thickened (1) lips are present. No appendages or decorations occur.

Plates (4) - Only one specimen was large enough to permit an accurate estimate of vessel diameter. It is 14-18 cm in diameter, the same as the median value for Bell Plain bowls. All the examples have inslantanted lip shapes, and none are decorated.

Necked bottle (1) - The specimen has an orifice diameter of 2-6 cm. The rim shape is vertical and the lip is rounded. The neck had a minimum height of 2.5 cm.

Matthews Incised, var. unspecified

Four body sherds display sets of lines that were incised in parallel patterns or at angles to one another. Three of those specimens have pastes that are similar to that of Baytown Plain, var. Mayfield. The other specimen has a paste similar to Mississippi Plain. The final sherd has three small punctations set in an arc over an incised line, and its paste is similar to Baytown Plain, var. Mayfield.

Old Town Red (Figure 12,l)

Shell-tempered, slipped ceramics constitute 4% of the collection. Temper size and quantity in the paste varies, but shell occurs in all specimens. Slipping occurs on interiors, exteriors, or both surfaces. Slip color is predominantly red, but gray and pink slips also occur. Vessel forms are jars and bowls.

Jars (1) - This example has a 26-30 cm orifice diameter, which is slightly larger than the median size of Mississippi Plain jars. The rim is constricted and the lip is outslantanted.

Bowls (2) - The size range of these specimens is similar to the median size of Mississippi Plain bowls (Table 10). Both rims are vertical with flat lips.

Varney Red

Two examples of this shell-tempered pan occur. Both body sherds have red-slipped interiors and fabric-impressed exteriors.

Kimmswick Fabric Impressed, var. unspecified

Fabric-impressed, shell-tempered sherds account for 1% of the assemblage. All are considered to derive from pans, although no rim sherds were recovered. The impressions were formed by fabrics with closely spaced rectilinear weaves. The large quantity of shell temper in these sherds results in a highly friable paste.

Kimmswick Fabric Impressed, var. Marshall (Figure 12,m-n)

The well-compacted paste of this provisional variety contains a high density of grog temper. The fabric impressions are widely spaced, coarse rectilinear or diamond-shaped patterns, and are sometimes roughly smoothed. The interior surfaces of these pans are generally highly smoothed or burnished. Four specimens have red-slipped interiors. The Marshall Variety sherds are thicker than other Kimmswick Fabric Impressed material. Based on stratigraphic evidence, this variety is older than the shell-tempered variety. It accounts for 4% of all sherds and 80% of all pan sherds.

Pans (6) - These vessels tend to be the largest containers in the assemblage, averaging greater than 38-42 cm in diameter. Lips are generally inslanted (4), but rounded (1) and thickened (1) forms also occur. Two specimens display exterior rimfolds.

Crosno Cordmarked (Figure 12,o-p)

Although never formally described, this type name has been applied to cordmarked, shell-tempered ceramics (Lewis 1986; Williams 1954) that occur consistently in early Mississippian contexts in this region. The Marshall site examples have pastes similar to that of Mississippi Plain. Two sherds have red-filmed surfaces, one on the sherd exterior, and the other on the interior surface. Jar and bowl forms are present. This type constitutes 1% of the Marshall site ceramic assemblage.

Jars (1) - This flanged rim as a 18-22 cm orifice diameter. The rim is folded over and the lip is pointed.

Bowls (1) - This vessel had a diameter of 30-34 cm. The rim is vertical and the lip is flat. It is the only example of a triple fold rim in the collection. This rim is broken along the fold and the fracture reveals that the rim was first cordmarked, folded, and then cordmarked again.

Wickliffe Thick (Figure 12,q)

Funnels are relatively uncommon in this assemblage. Both plain and incised surfaces occur. The average funnel size is 14-18 cm in diameter. All four rims are from the upper orifices. Two rims are flared, one is vertical, and one is incurvate. Lips are flat (2), rounded (1), or thickened (1).

Baytown Plain, var. Mayfield (Figure 12,r-y)

This provisional variety of Baytown Plain accounts for 37% of all sherds in the collection, but it is difficult to sort. Sherds are grog-tempered, but the size and quantity of temper varies. Pastes range from fine to medium and are well compacted, leaving even, smooth breaks on recent fractures. The exterior and interior surface colors are dark, ranging from dark tan to black.

It has proven difficult to sort sherds of this variety consistently from Bell Plain. A combination of paste and surface characteristics provide the most reliable sorting criteria. Sherds were classified as Bell Plain when pastes were fine and the surface was well smoothed or burnished. Sherds with medium to relatively fine pastes and wiped or roughly smoothed exterior surfaces were classified as Baytown Plain, var. Mayfield. Mississippi Plain sherds are distinguished from var. Mayfield by the inclusion of shell temper in the paste and a more friable texture.

Jars (8) - These specimens tend to be similar in size to Bell Plain jars (Table 10). Incurvate rims are common (6), but inslanted (2) rims also occur. Lip forms include rounded (4), flat (2), pointed (1), outslanted (1), and thickened (1) specimens. Two sherds have folded rims. Another specimen has a rounded tab placed on the rim. One loop handle with nodes is also present.

Bowls (5) - Median vessel size is similar to Bell Plain bowls (Table 10). Vertical (2), excurvate (2), and everted (1) rims occur. Rounded lips (3) are common, but pointed (1) and thickened (1) lips also exist. One folded rim has a notched tab appendage. One eroded rim effigy adorno, which appears to represent a bird, was recovered from Unit 1.

Mulberry Creek Cordmarked, var. Sandy Branch (Figure 12,z-cc)

Grog-tempered, cordmarked sherds constitute 14% of the ceramic assemblage. The provisional variety, Sandy Branch, is proposed for reasons similar to those used to define Baytown Plain, var. Mayfield. Pastes are medium to fine and are well compacted. They lack the convoluted texture that is typical of other described Mulberry Creek Cordmarked varieties. Surface colors are dark tan to black. The cordmarked surfaces are partially smoothed and sometimes burnished. The upper portions of vessels (especially rim folds) were sometimes smoothed after the cordmarking had been applied. Red slipping is a minor

attribute of this variety. Five sherds in this sample show red-slipped interiors and cordmarked exteriors. The jar is the only identified vessel form.

Jars (8) - Average vessel size is slightly smaller than for Baytown Plain jars. Rims are vertical (3), inslanted (3), or incurvate (2). Half of the rims have exterior rimfolds. Lips are generally flat (7); there is one specimen with a pointed lip. With the exception of one loop handle collected from a shovel test, appendages do not occur.

Larto Red, var. Carlisle

This provisional variety accounts for 4% of the sherds in the assemblage. The grog-tempered paste is medium to fine in consistency. Slipping may occur on the interior, exterior, or both surfaces.

Jars (1) - The specimen has an inslanted rim shape and a thickened lip. The rim diameter is 10-14 cm.

Hooded Bottles (1) - The specimen has a small orifice and a rounded lip.

Yankeetown Incised

Although this type is more common in the Ohio Valley, Yankeetown sherds occur over a broad area of the lower Midwest (Bareis 1976; Clay 1963, 1984). A single jar rim was found in the test excavations. The rim is incurvate and the lip is inslanted with exterior notches. Below the rim exterior, two irregularly applied linear incisions occur at an angle to the lip of the vessel. No Yankeetown body sherds were identified in the collection, but this is not surprising in view of the similarities of paste, temper, and surface finish between the Yankeetown material and Baytown Plain, var. Mayfield. Two Yankeetown Fillet sherds were also recovered from shovel tests at this site.

Unclassified Ceramics

This category includes two incised sherds. One Mississippi Plain paste specimen has two parallel incised lines on its exterior, but the pattern is too small to identify. It does not appear to be an example of Matthews Incised. The second example, which has a Bell Plain paste, is decorated on its exterior by intersecting incised lines.

Other Fired Clay Artifacts

Sherd Disks

Two disks, which were made from Mulberry Creek Cordmarked, var. Sandy Branch body sherds, were recovered from excavated contexts. One specimen, which has a red-slipped interior, was found in the fill of Postmold 10 in Unit 1. The second artifact was recovered from midden contexts in Unit 2. Both disks measure 2 cm in diameter.

Daub

Fired clay daub was found in most contexts. It occurred in small fragments and yields little information on house construction materials or techniques. The greatest quantity of daub was associated with the circular wall trench structure in Unit 3. In Units 1 and 2, the greatest concentrations of daub occurred on former living floors of structures.

Chipped Stone Tools

Chert tools and artifacts are described below by morphology, source locality, and evidence of thermal alteration. Morphological classes are based upon the reduction stages and evidence of utilization. Chert source inferences follow the sorting criteria outlined by Stelle (1986). Thermal alteration was recognized principally by color changes. Counts of the artifact classes from each unit are listed in Table 11.

Projectile Point (Figure 13,a)

One stemmed projectile point with incurvate lateral blade margins was found in the plowzone of Unit 3. The shoulders of this Dongola/Cobden chert specimen are barbed and the stem is contracting. The distal end and a portion of the stem base are missing.

Bifaces (Figure 13,b-d)

Bifaces exhibit bifacial chipping and retouched margins that form low edge angles. These tools may have been used as cutting or chopping implements. Seven specimens were manufactured from Purchase Gravel, four from Mill Creek, two from Dover, and one each from Glacial Gravel and an unknown source.

Scrapers

Side scrapers (4 artifacts) - These tools show steep working edges along one or more lateral margins. The Unit 1 specimen is Novaculite. Two of the scrapers from Unit 3 are Dongola/Cobden chert and one is Mill Creek chert.

TABLE 11: Proveniences of Marshall Site Stone Artifacts.

| Artifact Class | Excavation Unit | | | | Totals |
|--------------------------|-----------------|-----|-----|----|--------|
| | 1 | 2 | 3 | 4 | |
| Chipped Stone Tools | | | | | |
| Projectile Point | 0 | 0 | 1 | 0 | 1 |
| Bifaces | 9 | 2 | 4 | 0 | 15 |
| Scrapers | 2 | 0 | 5 | 0 | 7 |
| Microdrills | 9 | 0 | 1 | 0 | 10 |
| Gravers | 2 | 0 | 1 | 1 | 4 |
| Picks | 1 | 0 | 3 | 0 | 4 |
| Hoe Fragments and Flakes | 45 | 8 | 44 | 3 | 100 |
| Modified Cobbles | | | | | |
| Abraders | 0 | 0 | 3 | 0 | 3 |
| Smoothing Stone | 0 | 0 | 1 | 0 | 1 |
| Other Stone Artifacts | | | | | |
| Cores | 10 | 0 | 4 | 0 | 14 |
| Angular Fragments | 127 | 17 | 59 | 10 | 213 |
| Primary Flakes | 241 | 30 | 80 | 0 | 351 |
| Secondary Flakes | 395 | 43 | 159 | 8 | 605 |
| Tertiary Flakes | 477 | 57 | 151 | 4 | 689 |
| Blades | 3 | 0 | 0 | 0 | 3 |
| Galena | 1 | 2 | 0 | 0 | 3 |
| Ferruginous Sandstone | 185 | 81 | 60 | 7 | 333 |
| Slab Sandstone | 602 | 21 | 71 | 5 | 699 |
| Other Sandstone | 95 | 0 | 20 | 12 | 127 |
| Limestone | 7 | 2 | 2 | 0 | 11 |
| Pebbles | 335 | 340 | 81 | 12 | 768 |
| Crinoid Stem | 0 | 0 | 1 | 0 | 1 |

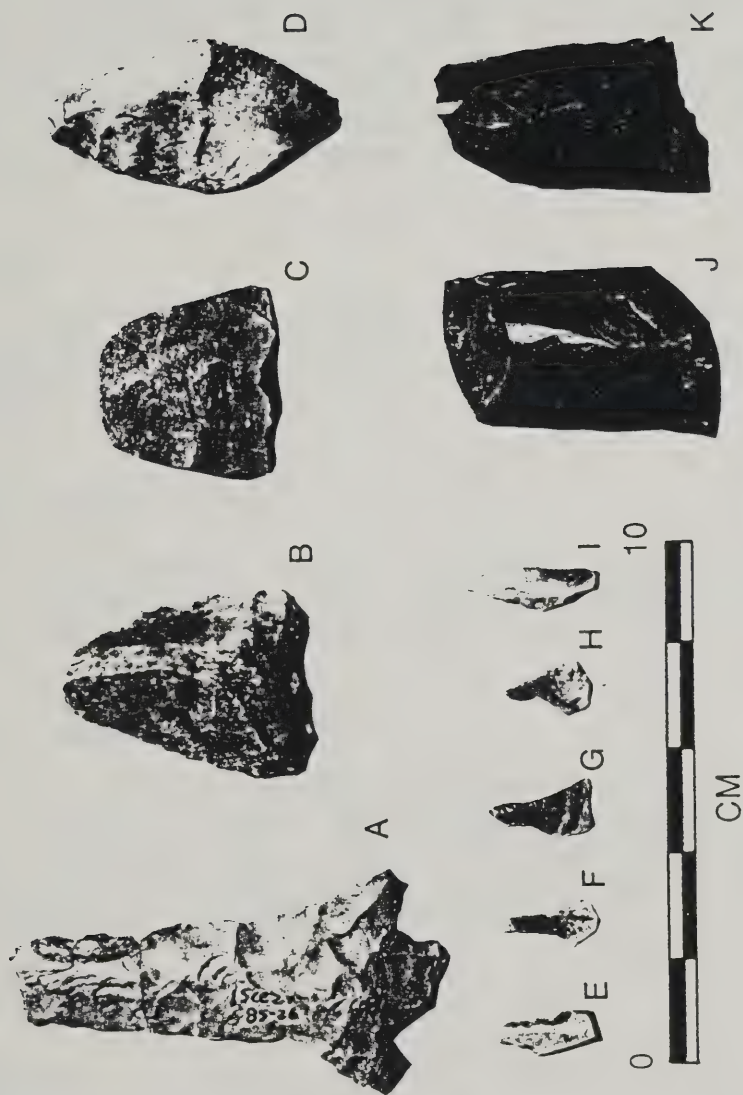


FIGURE 13. Chipped Stone Artifacts: a, projectile point; b-d, bifaces; e-i, microdrills; j-k, picks.

Spokeshaves (3 specimens) - These artifacts show arcuate working edges and steep working edge angles. The Unit 1 specimen is Novaculite and the two spokeshaves from Unit 3 are Purchase Gravel and Glacial Gravel, respectively.

Microdrills (Figure 13,e-i)

Microdrills have been reported from a number of Mississippian sites in the Midwest and Mid-South (Cottier 1977b; Mason and Perino 1966). Following Cottier's (1977b) classification system, eight of the Marshall specimens are expanded base microdrills and one is a bipolar microdrill. The distal ends have been broken on five specimens. Seven of the drills are made from Mill Creek chert, and one each are Purchase Gravel and an unknown chert.

Gravers

Three artifacts display spur-like projections with small step fractures along the spurs. The two specimens from Unit 1 were both manufactured from Purchase Gravel, and the Unit 3 specimen is Dover chert.

Picks (Figure 13,j-k)

This category includes two medial segments and one bit fragment, all of which are Dover chert. Each specimen exhibits the characteristic long, narrow, polished pick shape with a triangular cross-section.

Hoe Fragments and Flakes

The category includes fragments of these distinctive tools as well as resharpening flakes. Eleven hoe fragments and 87 resharpening flakes were recovered. Most are Mill Creek chert. One fragment and six flakes are Dover chert, one fragment and two flakes are an unknown chert, and one hoe flake is Dongola/Cobden chert.

Modified Cobbles

Abraders

One sandstone abrader with V-shaped grooves was found in Unit 3. Two highly polished slab sandstone pieces, perhaps used for grinding pigment, were also recovered in Unit 3.

Smoothing Stone

One heat-treated pebble from Unit 3 exhibits multiple, irregular striations on one broad face. It was possibly used as a polishing stone in the manufacture of pottery.

Other Stone Artifacts

Cores and Debitage

Cores exhibit multiple flake scars. Flakes were defined on the basis of a striking platform and bulb of percussion. Primary flakes exhibit significant cortex, secondary flakes retain limited cortex, and tertiary flakes have no cortex. Angular fragments lack the required characteristics of cores or flakes. Blades are twice as long as wide, and tend to have triangular cross-sections. The distribution of these classes by units is listed in Table 11.

Chert sources include locally available Purchase Gravel, river transported Glacial Gravel, and imported types, the most common of which are Mill Creek and Dover (Table 12). Mill Creek chert arrived at the site primarily as reduced cores or tools. Much of the debitage appears to have resulted from the reworking of tools, especially hoes. Dover chert appears to differ slightly from Mill Creek in the quantity of cortex material. Although Dover tools and prepared cores may have been imported, some raw nodules also may have entered the site. The remaining chert types, Dongola/Cobden, Burlington, St. Louis, and Novaculite all occur in quantities that make interpreting their acquisition form difficult.

Purchase Gravels were commonly heat-altered prior to being worked. Ninety percent of all heat treated specimens are of this chert type (Table 12).

Galena

Three small, blocky chunks of galena were recovered, two from Unit 2 and one from Unit 1. The largest specimen, which came from Unit 2, weighs 22 gm. The other chunks weigh 6 and 2.5 gm each. Small quantities of galena are relatively common on Mississippian sites.

Fire-Cracked and Unmodified Rocks

Most of the remaining stone categories were probably locally derived. Ferruginous and slab sandstone occur along the bluff edges and in stream deposits. Ferruginous sandstone was apparently utilized in pits and hearths and may have also served as a source of pigment. Slab sandstone occurs locally in 1-2 cm thick sheets, and was probably employed in a variety of tasks that needed a level platform. Small quantities of fire-cracked rock were also recovered. These metamorphic or igneous rocks were probably collected from river gravel deposits.

TABLE 12. Marshall Site Chert Debitage Data.

| Artifact Class | Purchase Gravel | Mill Creek | Dongola/ Dover | Cobden | Burlington | St. Louis | Novaculite | Glacial Cobble | Quartzite | Unknown |
|-------------------|-----------------|------------|-------------------|--------|------------|-----------|------------|----------------|-----------|---------|
| Tools | 10 | 103 | 14 | 4 | 0 | 0 | 2 | 2 | 0 | 5 |
| Cores and Cobbles | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| Angular Fragments | 146 | 8 | 5 | 9 | 3 | 1 | 0 | 26 | 0 | 15 |
| Primary Flakes | 285 | 15 | 3 | 9 | 0 | 1 | 0 | 23 | 0 | 15 |
| Secondary Flakes | 375 | 82 | 30 | 21 | 8 | 10 | 6 | 40 | 0 | 34 |
| Tertiary Flakes | 264 | 165 | 119 | 23 | 35 | 16 | 3 | 33 | 1 | 34 |
| Total (#) | 1100 | 373 | 171 | 68 | 46 | 28 | 11 | 125 | 1 | 104 |
| % of Total | 54 | 18 | 8 | 3 | 2 | 1 | * | 6 | * | 5 |
| % Utilized | 4 | 5 | 11 | 17 | 2 | 9 | 9 | 1 | 0 | 3 |
| % Heat-altered | 38 | 11 | 1 | 6 | 4 | 0 | 9 | 1 | 0 | 0 |
| Weight (g) | 2862 | 783 | 386 | 244 | 53 | 22 | 56 | 208 | 1 | 155 |
| % Weight | 60 | 16 | 8 | 5 | 1 | * | 1 | 4 | * | 3 |

* less than 1% of total.

Faunal Remains

(Paul P. Kreisa)

Faunal material was recovered through screening and flotation techniques and by hand. The material was compared to a modern zoological collection for identification. Data reported include taxonomic assignment, modifications, the presence of burning, and the degree of fragmentation of each element. A fragment is defined as a specimen that represents less than one-half of a whole element.

A total of 292 elements were collected. Most elements (209) came from Unit 1; 79 elements were found in Unit 3; two elements occurred in Unit 4; and no bone was found in Unit 2. All of the elements are fragmentary and 95% of them are burned. Mammal remains dominate the assemblage, accounting for 90% of all elements (Table 13). Three whitetail deer (Odocoileus virginianus) elements are the only identified mammal remains. One unidentifiable element bears butchering marks. Two turtle shell fragments were also recovered. One was identified as box turtle (Terrapene sp.). Two fish elements are represented in the collection, one of which is identified as freshwater drum (Aplodinotus grunniens) and the other as catfish (Ictalurus sp.). Finally, two unidentified bird bones and three mussel shell fragments were also found.

Few inferences on prehistoric exploitation of animals can be made due to the poor state of preservation of the remains. All fauna classes occur, suggesting a broad-based exploitation pattern typical of Mississippian assemblages (Lewis 1974; Smith 1975) with mammals, especially whitetail deer, being most common.

Botanical Remains

(S. Justine Woodard)

Flotation samples of 10 l of soil were collected from most excavation levels. The fill of Feature 6, a smudge pit, was collected for flotation after a carbon sample and the largest maize cobs were removed in the field. All flotation samples were water floated by an immersion technique (Struever 1968), utilizing a wash tub with a 2 mm mesh bottom. Light fractions were removed by surface skimming with nylon mesh. Heavy fractions were returned to the laboratory and further cleaned in a solution of zinc chloride.

Botanical remains from each sample were passed through a 2 mm screen. The size-graded fractions were examined under low magnification (10-20X). All material larger than 2 mm was separated into classes. The fraction that was smaller than 2 mm was carefully scanned, and all seeds and cultivated plant remains were removed. Identification of remains was made with the aid of standard texts (Martin and Barkley 1961; Panshin and de Zeeuw 1970), and by comparison to modern and

TABLE 13. Marshall Site Faunal Remains by Taxonomic Class.

| Class | Number of Identified Specimens | Number of Unidentified Specimens | Total Number of Specimens | Percent of all Specimens |
|-----------------------|--------------------------------------|--|---------------------------------|--------------------------------|
| Vertebrate | 0 | 20 | 20 | 7 |
| Mammals | 3 | 260 | 263 | 90 |
| Birds | 0 | 2 | 2 | * |
| Reptiles | 1 | 1 | 2 | * |
| Fish | 2 | 0 | 2 | * |
| Molluscs | 0 | 3 | 3 | 1 |
| Totals | 6 | 286 | 292 | 98 |
| * Less than 1 percent | | | | |

archaeological reference specimens. Identification was made to the genus level in most cases, and to the species level whenever possible.

Wood

Wood charcoal was present in all flotation samples. A total of 2,032 wood fragments, weighting 17.8 g were recovered. Samples of 20 fragments, or all wood fragments in samples of less than 20 fragments, were selected for identification from each flotation sample. Oak, hickory, and ash comprise over 85% of the 203 identified wood fragments (Table 14). A similar dominance of oak, hickory, and ash was found at the Wickliffe site (Mackin 1986), a nearby Mississippian town situated in a similar environmental setting. This wood use pattern contrasts with the availability and composition of the native vegetation around Marshall. Although oak and hickory are the dominant tree species a short distance east of Marshall on the rolling uplands, the local bluff-crest forest is dominated by beech (*Fagus grandifolia*). Oak, hickory, and ash are minority types in this forest (Braun 1950; Lewis 1974). Selective wood utilization is apparent in the Marshall sample, or the forest composition has changed since the site was occupied.

Nutshell

Nutshell was the second most common plant remain. Of the 367 nut fragments, 301 were identified (Table 14). Thick-shelled hickory nutshell (*Carya* spp.) accounts for 38% of the identified nutshell. Given the low frequency of walnuts (less than 4% of all nutshell), it is likely that the remains classified as Juglandaceae (28%) are predominantly hickory. Pecan nutshell is next in frequency (23%). Other utilized nuts include hazelnut, acorn, and chestnut.

The dominance of hickory within the nut remains is a common prehistoric pattern due in part to the better preservation of this thick-shelled nut. The importance of nuts in prehistoric diets apparently declined over time (Johannessen 1984), although ethnohistoric accounts indicate nuts were an important source of oil (Swanton 1946). The ratio of nut to wood fragments, an index of the relative importance of nuts, is 0.16, similar to Mississippian plant assemblages in western Kentucky (Edging 1985; Edging and Dunavan 1986) and the American Bottom (Johannessen 1984).

Seeds

Seeds were relatively uncommon in the plant assemblage with an average of only two seeds per flotation sample. Of the 44 recovered seeds, 35 were identified (Table 14). Species associated with the starchy/oily seed complex, which have been suggested to be cultigens in the Eastern Woodlands (Asch and Asch 1978; Ford 1981; Johannessen 1984), are of special interest. The Marshall site seeds include starchy seeds goosefoot, maygrass, and knotweed, and the oily seed, marsh elder.

TABLE 14. Marshall Site Botanical Remains from Midden Levels.

| Scientific Name | Excavation Unit | | | Totals |
|---|-----------------|-----|------|--------|
| | 1 | 2 | 3 | |
| WOOD (All Fragments) | 522 | 432 | 1344 | 2298 |
| <u>Acer</u> sp. (maple) | 1 | 5 | 1 | 7 |
| <u>Acer/Betula</u> sp. (maple/birch) | 0 | 0 | 1 | 1 |
| <u>Betula</u> sp. (birch) | 1 | 0 | 2 | 3 |
| <u>Carya</u> spp. (hickory) | 28 | 5 | 17 | 50 |
| <u>Carya illinoensis</u> (pecan) | 0 | 0 | 1 | 1 |
| <u>Castanea</u> spp. (chestnut) | 0 | 0 | 1 | 1 |
| <u>Fraxinus</u> sp. (ash) | 15 | 19 | 31 | 65 |
| <u>Juglans</u> sp. (walnut) | 0 | 0 | 1 | 1 |
| <u>Liquidambar stryaciflua</u> (sweetgum) | 0 | 0 | 1 | 1 |
| <u>Platanus</u> sp. (sycamore) | 2 | 0 | 0 | 2 |
| <u>Quercus</u> sp. (oak) | 9 | 10 | 14 | 33 |
| <u>Quercus</u> sp. (red oaks) | 12 | 3 | 13 | 28 |
| <u>Quercus</u> sp. (white oaks) | 7 | 0 | 3 | 10 |
| <u>Robinia psuedoacacia</u> (black locust) | 2 | 0 | 1 | 3 |
| Salicaceae (willow/cottonwood) | 0 | 0 | 2 | 2 |
| Ulmaceae (elm) | 1 | 0 | 2 | 3 |
| diffuse porous | 0 | 2 | 4 | 6 |
| semi-ring porous | 1 | 0 | 0 | 1 |
| ring porous | 4 | 8 | 24 | 36 |
| Unidentified | 25 | 51 | 38 | 114 |
| Wood Fragments Analyzed | 108 | 82 | 136 | 368 |
| NUTSHELL (All Fragments) | 295 | 4 | 78 | 377 |
| <u>Carya</u> spp. (hickory) | 76 | 3 | 36 | 115 |
| <u>Carya illinoensis</u> (pecan) | 65 | 0 | 4 | 69 |
| <u>Corylus</u> sp. (hazel) | 1 | 0 | 0 | 1 |
| Juglandaceae (hickory/walnut) | 57 | 0 | 29 | 86 |
| <u>Juglans</u> sp. (walnut) | 4 | 0 | 0 | 4 |
| <u>Juglans nigra</u> (black walnut) | 5 | 0 | 1 | 6 |
| <u>Quercus</u> sp. (oak) | 14 | 0 | 1 | 15 |
| <u>Castanea</u> spp. (chestnut) | 2 | 0 | 0 | 2 |
| Unidentified | 71 | 1 | 7 | 79 |
| Nut/Wood Ratio | .56 | .01 | .06 | .16 |

TABLE 14. Marshall Site Botanical Remains from Midden Levels (concluded).

| Scientific Name | Excavation Unit | | | Totals |
|--|-----------------|----|----|--------|
| | 1 | 2 | 3 | |
| SEEDS (Total) | 14 | 8 | 21 | 43 |
| <i>Amaranthaceae</i> (amaranth) | 0 | 1 | 1 | 2 |
| <i>Ambrosia</i> sp. (ragweed) | 0 | 1 | 0 | 1 |
| <i>Chenopodium</i> sp. (goosefoot) | 1 | 0 | 0 | 1 |
| Compositae (Composite) | 0 | 0 | 1 | 1 |
| Euphorbiaceae (spurge) | 0 | 0 | 2 | 2 |
| Gramineae (grass) | 0 | 1 | 3 | 4 |
| <i>Iva annua</i> (marsh elder) | 1 | 0 | 0 | 1 |
| Leguminosae (bean) | 1 | 0 | 0 | 1 |
| <i>Nelumbo lutea</i> (American lotus) | 2 | 0 | 1 | 3 |
| <i>Phalaris caroliniana</i> (maygrass) | 1 | 0 | 0 | 1 |
| <i>Polygonum</i> sp. (knotweed) | 0 | 0 | 1 | 1 |
| <i>Polygonum erectum</i> (erect knotweed) | 2 | 1 | 1 | 4 |
| <i>Polygonum pennsylvanicum</i> | 0 | 2 | 10 | 12 |
| <i>Strophostyles</i> sp. (wild bean) | 0 | 0 | 1 | 1 |
| Unidentified | 6 | 2 | 1 | 9 |
| TROPICAL CULTIGEN | | | | |
| <i>Zea mays</i> (maize) | | | | |
| Cupule Fragments | 28 | 34 | 34 | 96 |
| Kernel Fragments | 69 | 17 | 30 | 116 |
| Glumes | 6 | 0 | 4 | 10 |
| OTHER PLANT PARTS | | | | |
| <i>Arundinaria</i> sp. (cane) | 0 | 1 | 8 | 9 |
| Monocot stem | 3 | 3 | 68 | 74 |
| Wood bark | 0 | 4 | 1 | 5 |
| Fungal fructification | 1 | 3 | 9 | 13 |
| Husklike fragment | 0 | 1 | 0 | 1 |
| Leaf fragment | 1 | 0 | 0 | 1 |

Tropical Cultigen

Maize was the only recovered tropical cultigen. Maize remains (cupules, kernels, and glumes) were ubiquitous, and were collected in mass from Feature 6 (Table 15). The analyzed portion of this feature (excluding a carbon sample submitted for radiocarbon dating) yielded over 30 g of maize fragments, including partial cobs. Measurement of 189 cupules shows a higher mean row number than other maize samples collected in the region (Cutler and Blake 1973; Edging and Dunavan 1986). Eight through 14-row maize cobs are present with 4% being 8-row, 41% are 10-row, 39% are 12-row, and 16% are 14-row.

Summary

The Marshall site plant remains are similar to those from other large Mississippian towns in this region (Edging 1985; Edging and Dunavan 1986; Mackin 1986). Wood remains suggest selection of particular types, rather than random utilization of the surrounding forest. Nuts, seeds, and maize contributed to the prehistoric diet. Maize was cultivated intensively.

Discussion of Excavation Results

Rationale for the Description of New Type Varieties

The four new provisional pottery type varieties were defined to capture the "transitional" nature of the Marshall site ceramic assemblage. It is relatively easy to sort the new varieties from older local Woodland types, but it is often difficult to sort some sherds of these varieties from later Mississippian ceramics. This difficulty reflects fundamental stylistic and technological continuities in local pottery-making traditions between the end of the Late Woodland period and the beginning of the Mississippi period. Significant changes in pottery and other items of material culture occur, but they take place in the context of a continuous thread of local cultural transitions. Those changes are clearly indigenous and owe little if anything to migrations, site unit intrusions, or other diffusionist models.

Sorting of the provisional varieties was based on both objective and subjective criteria. An objective criterion, the absence of shell temper, is used as a key attribute to distinguish all varieties from more recent ceramic types. Elsewhere the junior author (Lewis 1982:4) has emphasized the fact that temper has little diagnostic utility in sorting the late prehistoric ceramics from this region, and that vessel form, surface finish, and decoration offer far more reliable data upon which to base sorting criteria. The "transitional" nature of much of the Marshall site pottery forces an exception to this generalization. A second objective criterion, surface finish, is utilized for sorting the four varieties from each other. Paste and surface finish were subjective criteria for sorting var. Mayfield from Bell Plain sherds. The Mayfield variety shows more similarities to Mississippi Plain than

TABLE 15. Botanical Contents of Feature 6.

| Taxon | Number | Weight (g) |
|----------------------------------|--------|------------|
| WOOD (total) | 4 | 0.7 |
| <u>Arundinaria</u> sp. (cane) | 348 | 5.8 |
| <u>Carya</u> spp. (hickory) | 2 | 0 |
| ring porous | 2 | 0 |
| SEEDS | | |
| <u>Amaranthus</u> sp. (amaranth) | 2 | 0 |
| TROPICAL CULTIGEN | | |
| <u>Zea mays</u> (maize) | | |
| cupules (including fragments) | 1502 | 31.2 |
| kernel fragments | 15 | 0.4 |
| glumes | 433 | 1.7 |
| OTHER PLANT PARTS | | |
| Amorphous charcoal | 29 | 0.2 |

to older Baytown Plain sherds, but, upon close scrutiny, it is also true that the material is not Mississippi Plain, at least as that type is generally described. The problem is just as bad when comparisons are made between the Mayfield variety and Bell Plain. Most of the Bell Plain sherds at Marshall are grog-tempered. Sherds were classified as Bell Plain when the surface was well smoothed or burnished and the paste was homogenous and relatively fine. Sherds of var. Mayfield include both fine and medium pastes, but surfaces are wiped rather than well smoothed or burnished. Thus, the Mayfield variety shares attributes with older Baytown Plain material, Bell Plain, and Mississippi Plain, but it also differs from each of those types.

The three other varieties also have attributes that have been used to place them in a "transitional" category. All lack shell-tempering, but the pastes of varieties Carlisle and Sandy Branch range from medium to fine. Some specimens have typical Bell Plain pastes, but their surface finish is not typical of the latter type. Rare specimens of var. Sandy Branch have smoothed-over cordmarked areas that have been burnished. Var. Carlisle includes examples that could be classified as Bell paste specimens of Old Town Red, but since the degree of surface smoothing was difficult to judge under the slipping, all grog-tempered, red-slipped sherds were classified as Larto Red, var. Carlisle.

Neither author is satisfied with the provisional varieties as described here, and we look forward to learning more about this and comparable material as research continues in the border counties. Paul Kreisa's 1987 test excavations at Twin Mounds (15BA2) have revealed a well-preserved James Bayou component, among others. Kreisa's analysis will give us our first well-controlled data set for comparison with the interpretations based on the Marshall site investigation and should help resolve some of the typological problems that we now have with the material that dates to the Cane Hills and James Bayou phases.

Temporal Trends in Ceramic Attributes

The diversity of the ceramic assemblage reflects technological and stylistic changes that occurred during the long occupation at the Marshall site. Several of those changes can be traced through inter- and intra-unit comparisons. Ceramic trends are best represented in the Unit 1 deposits, which include a long temporal span of occupation and remains that are older than those of the other excavation units. Although the construction of several house basins resulted in mixing of the midden deposits, there are clear changes in the ceramic assemblage from the base to the top of the unit. The deposits in Units 2, 3, and 4 represent shorter intervals of time, and there are few delineable stratigraphic changes in the ceramic assemblages of these units. In the comparisons discussed below, the sherds from each of the latter units are treated as discrete assemblages.

The delineated ceramic trends are:

- A. An increase in plain sherds relative to cordmarked and red-slipped sherds;

- B. An increase in the use of shell as a tempering agent;
- C. An increase in the average wall thickness of Mississippi Plain sherds;
- D. An increase in vessel form diversity; and
- E. A decrease in the frequency of the folded rim mode.

Plainwares increase from 50% at the base of Unit 1 to 80% of the assemblage at the top. Cordmarked and red-slipped ceramics decline in frequency over the same interval (Figure 14). The frequency of shell-tempered types increases slightly but steadily in this unit, but grog-tempered sherds remain dominant (Figure 15). Units 2, 3, and 4 have high percentages of plainwares and low frequencies of cordmarked or red-slipped types (Figure 16). Grog-tempered types occur in Units 2 and 3 in much lower frequencies than in Unit 1 (Figure 17). The average thickness of Mississippi Plain sherds increases from a median of 5 mm to 7 mm in the Unit 1 deposits (Figure 18). The median value for Mississippi Plain sherd thickness in the other units is equivalent to the upper levels of Unit 1. This change in vessel thickness is a function of the increasing average size of Mississippi Plain vessels. As discussed above, Mississippi Plain jars and bowls include the largest examples in those form classes among all of the recorded types (Table 10), and the largest vessels are in the most recent contexts. As vessel size increased, perhaps due to changes in the organization of household maintenance, cooking techniques, or storage activities, wall thickness increased to maintain the physical integrity of the vessel.

On the basis of comparisons of ceramic trends, cross-dated artifacts, and absolute dates, it is inferred that the loci tested by Units 2-4 are contemporaneous with roughly the upper half of the Unit 1 deposit. Insofar as this is true, several generalizations can be made concerning other temporal patterns in the ceramic assemblage. There is a general increase in vessel form diversity and a decrease in the rim fold mode over time. In the lower levels of Unit 1, jars, bowls, pans, and a hooded bottle are present. Rim folds are common on jars and pans. In the middle portion of Unit 1, the funnel form occurs. Plates are found only in the upper 30 cm of the midden. All of the above-mentioned vessel forms and the necked bottle form are present in Unit 3 and only one rim from Unit 3 displays the folded rim attribute.

Several ceramic types occur that are useful temporal markers. Yankeetown Incised, Crosno Cordmarked, and Varney Red are limited to Cane Hills or James Bayou phase contexts in this region. All of these types are present in the lower levels of Unit 1, and except for two sherds of Crosno Cordmarked in Unit 3, are absent in the other units.

Summary

The investigations at Marshall provide a preliminary understanding of the intensive prehistoric occupation of this location. This occupation spans several centuries and includes Cane Hills, James Bayou,

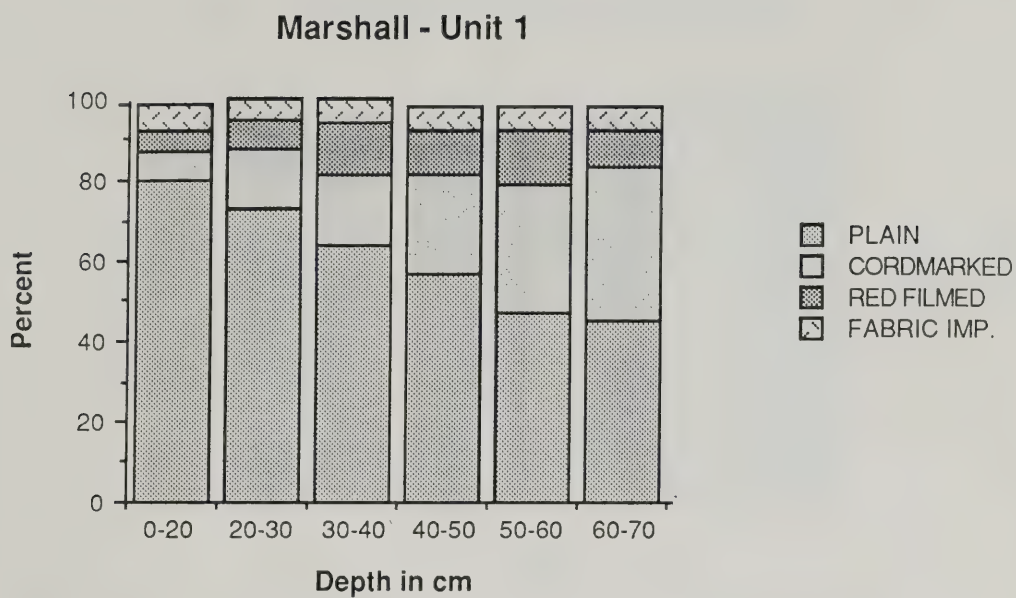


FIGURE 14. Stratigraphic Changes in Surface Treatment of Ceramics in Marshall Site Unit 1.

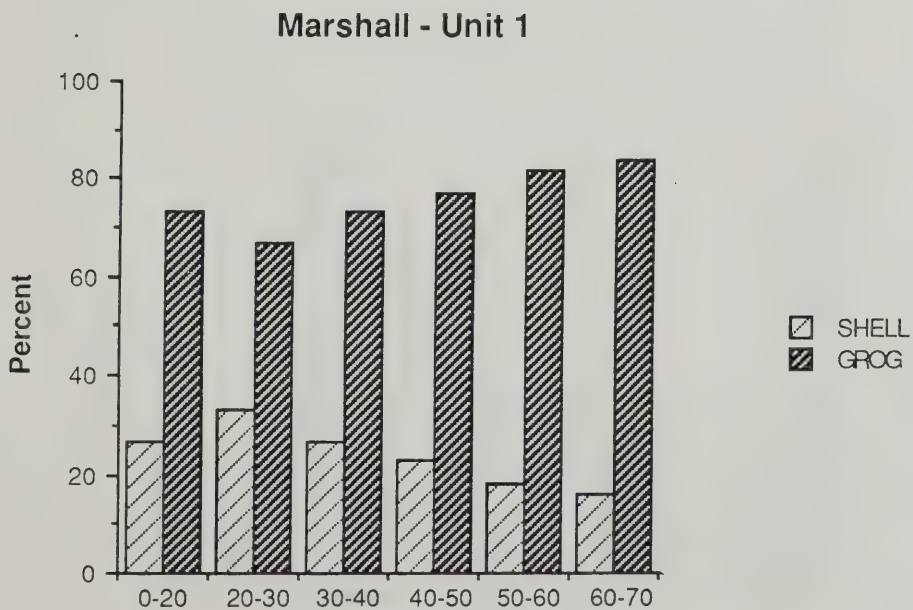


FIGURE 15. Stratigraphic Changes in Shell and Grog Temper in Marshall Site Unit 1.

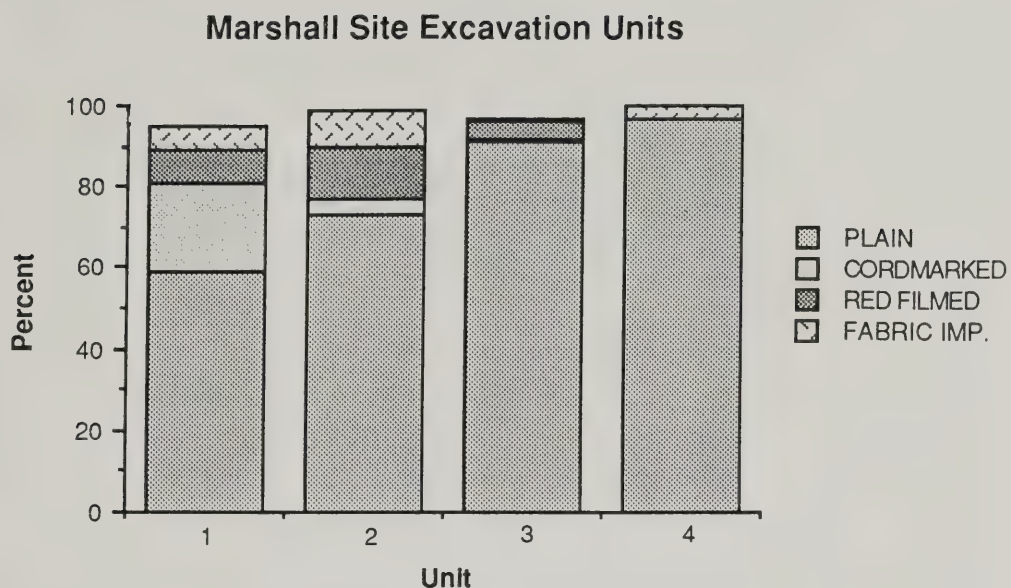


FIGURE 16. Inter-unit Comparison of the Frequencies of Plain, Cordmarked, Red-Filmed and Fabric Impressed sherds at the Marshall Site.

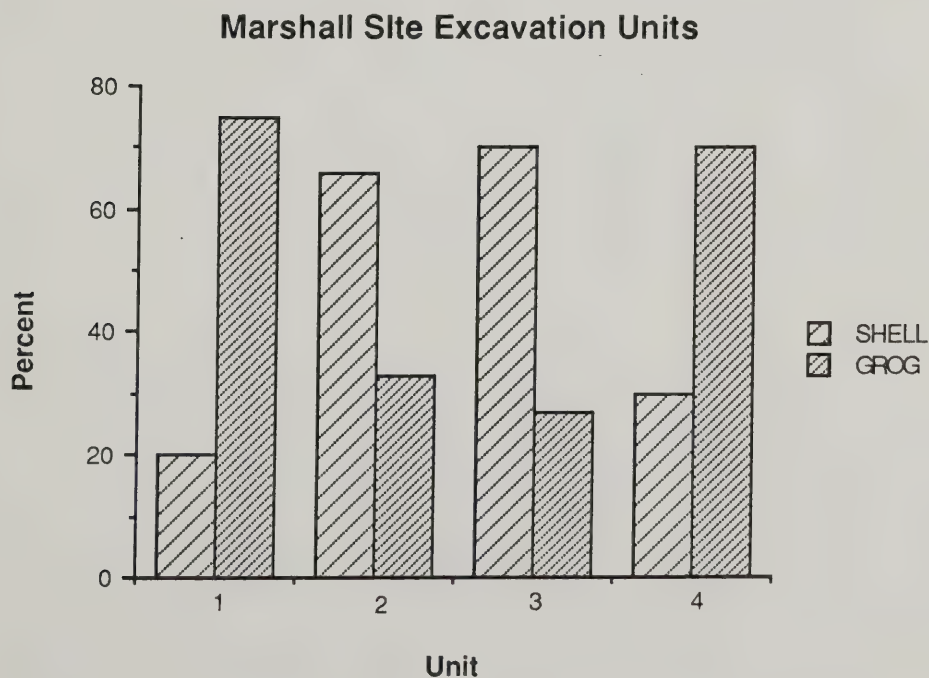


FIGURE 17. Inter-unit Comparison of the Frequencies of Shell and Grog Temper at the Marshall Site.

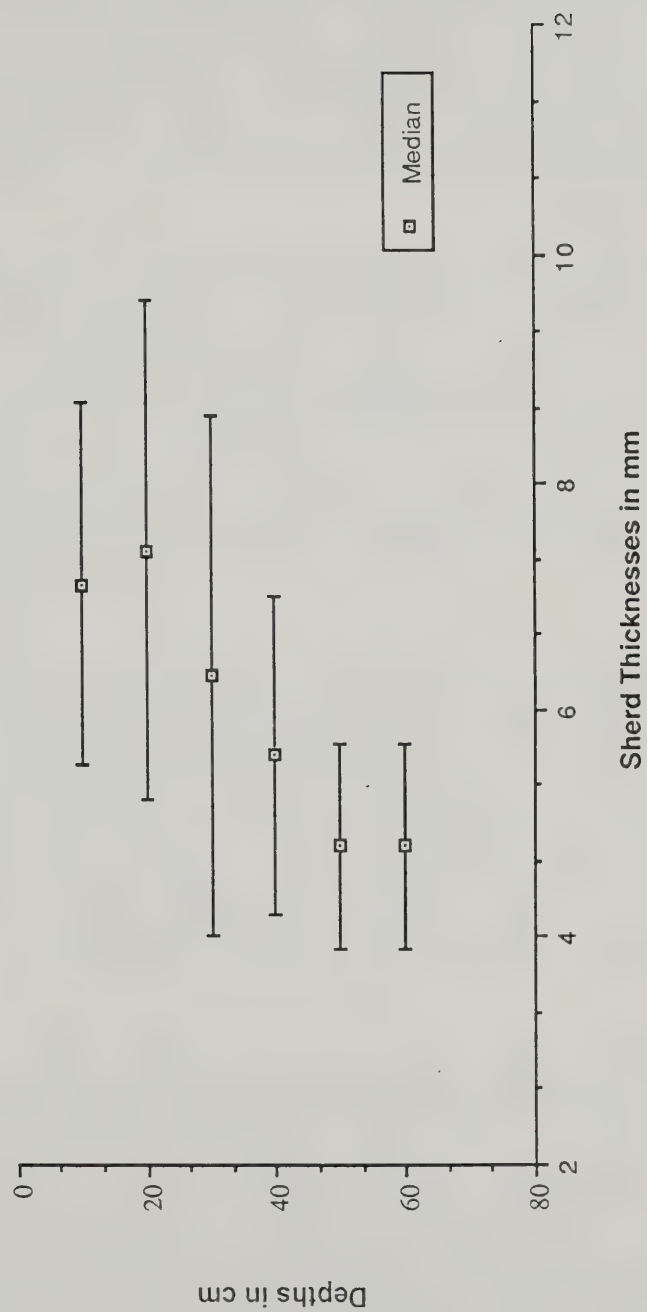


FIGURE 18. Stratigraphic Changes in Mississippi Plain Sherd Thicknesses in Marshall Site Unit 1.

and Dorena phase components. The deep midden deposits, as well as the site size and plan, indicate that Marshall was a large, permanently occupied village. Absolute age estimates and the ceramic analysis bracket the occupation between A.D. 850-1250.

Our understanding of the spatial extent of the occupation over time is incomplete. The oldest midden levels occurred in Unit 1. Available evidence suggests that the occupation of the site was continuous over the span of the Mississippian use of this locality. Mounds, apparently constructed to provide substructure platforms for buildings, occur at Marshall, but little is known about them beyond the information provided by Unit 3. The design of the village may have included a plaza, but its location, and indeed, its existence have yet to be unequivocally demonstrated.

Single-set post and wall trench rectangular structures, constructed of wattle and daub, occur in high density. A circular wall trench structure was constructed late in the site's occupation. Subsistence data indicate a typical Mississippian adaptive pattern (Lewis 1974, 1986; Smith 1978, 1985). Maize was an important subsistence crop, and was supplemented by the cultivation of starchy and oily seeds, the gathering of other nuts and seeds, and a broad-based hunting pattern. Imported raw materials, principally chert and galena, suggest that the Marshall site inhabitants participated in a regional trade network that minimally incorporated southern Illinois and the Tennessee-Cumberland valleys.

The origins of Mississippian towns in the region are incompletely known. Many of the towns were occupied for centuries and the archaeological evidence of the oldest components were often destroyed or deeply buried by more recent occupations. Lewis (1983, 1986) has argued that large, fortified towns with central plazas and platform mounds occur during the James Bayou phase, and possibly originated during the Late Woodland period. This interpretation is supported by the Marshall test excavation results. The age of the site's deposits and the absence of more recent occupations suggests that this location and the nearby Turk site, a major Mississippian town, are important research resources for the investigation of the development of Mississippian towns.

The inferred organizational relationships that existed between Marshall and Turk represent an important data base for understanding site abandonment processes and the development of political centers within the settlement system. Marshall was a large village during the James Bayou phase, and the most recent Marshall occupations overlap in time with the first occupations at Turk. During the Dorena Phase, the Marshall village was gradually abandoned, and Turk developed as a major town. The occupation at Turk ended during the Medley phase. Viewed across the region, these site abandonments were part of a continual cycle of village creation, abandonment, and often, reoccupation.

THE WHITE SITE

Site Description and Setting

The multi-component White site (15FU24) is located in the rolling uplands north of Bayou de Chien where the stream enters the Mississippi River floodplain (Figure 1). The site area covers 6 ha on the southern extent of a southwest sloping ridge (Figure 19). Immediately to the south lies the first terrace and floodplain of Bayou de Chien and to the west is the Mississippi River floodplain. An intermittent stream flows into the bottoms north of the site. A second small stream is located to the southeast within a former channel of Bayou de Chien.

The soil of this part of the ridge is classified as Forestdale silt clay loam of the Grenada-Calloway-Loring-Memphis association (Newton and Sims 1961). It was deeply eroded by poor soil conservation practices during the nineteenth century. An oak-hickory forest was present prior to clearing (Lewis 1974). A sweetgum-elm-cypress seasonal swamp and cypress deep swamp forest communities (Lewis 1974) cover the bottoms to the south and east.

The site was initially reported by McGraw (1981) during the Great River Road survey project. The site was interpreted as a Late Woodland component based upon the presence of Baytown Plain and Mulberry Creek Cordmarked sherds in surface collections. Subsequent collections indicate that other prehistoric components are also present. Test excavations at the White site were conducted by Sussenbach in March of 1986.

Excavation and Stratigraphy

Daub concentrations were detected in the early spring of 1986 when surface visibility was excellent. Soil probes in one of those areas revealed a thick daub layer beneath the plowzone. This area was selected for a 2 m² test excavation.

Unit 1 (N1-S2, E68-70)

The plowzone consisted of a 20-23 cm deep, light brown (10YR3/3) silty clay loam. Immediately below the plowzone a large concentration of daub was encountered in the southern portion of the unit, while sterile soil was present in the north. The daub layer was part of a well preserved, burnt prehistoric structure. The unit was extended 1 m to the south to uncover more of the structure. After the plowzone of the unit extension was removed, the northeast corner of the building was defined. The 8 cm thick daub layer was removed in the eastern half of

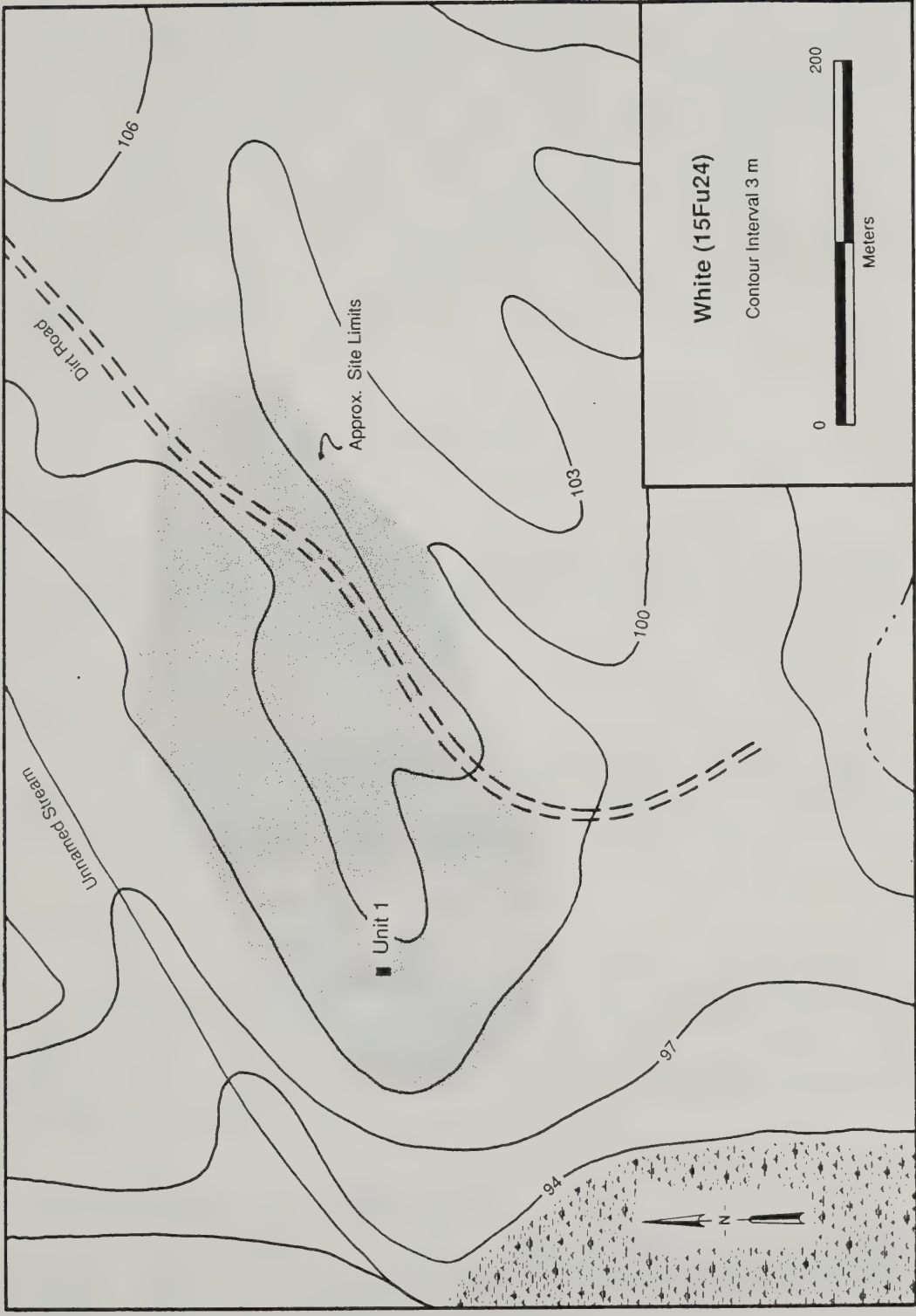


FIGURE 19. Topographic Map of the White Site.

the unit to determine the building construction technique and assess the state of preservation of the structure.

The removal of the daub layer revealed the northeastern corner of the house floor (Figure 20). Constructed with wall trenches, the wattled walls had been heavily plastered with clay. The house, including wall and roof elements, had burned and collapsed inward onto the living floor. Two carbon samples from posts within the daub layer were submitted for radiocarbon age determinations. One sample, consisting of the outer rings and bark of a bald cypress post, dated to A.D. 1277 (1295) 1398 (ISGS-1543; 640 \pm 70 BP). The outer rings of a carbonized birch post were dated to A.D. 1300 (1401) 1427 (ISGS-1544; 560 \pm 70 BP). A circular pit, Feature 2, was exposed beneath the collapsed east wall of the house. The excavation was halted at this point, since considerable time would have been required to excavate the entire structure, which on the basis of soil probes measures 4 by 3 m (Figure 21). Such an excavation was beyond the scope of the present project.

Cultural Remains

Ceramics

A total of 153 sherds, including seven rim sherds, were collected. Woodland and Mississippian types occur in almost equal quantities and were distributed as shown in Table 16.

Mississippi Plain

Coarse paste, shell-tempered plainwares account for 38% of the ceramic assemblage. Grog occurs as an additional tempering agent in much of the sample. The only recovered rim sherd is from a bowl with a 34-38 cm rim diameter. The rim shape is vertical and the lip is flat.

Bell Plain

This fine paste plainware comprises 9% of the assemblage. Two bowl rim sherds are present. One specimen has a flared piecrust rim with a rounded lip. The orifice diameter is indeterminable. The second example has a vertical rim with a rounded lip and an estimated diameter of 10-14 cm. Two body sherds have modeled appliques on the exterior surfaces.

Matthews Incised, var. unspecified

Two sherds display incised chevrons typical of this type, but neither sherd is large enough to allow identification to the variety level. One jar rim sherd is incurvate and has a flat lip. The estimated vessel orifice diameter is 14-18 cm.

WHITE SITE -- UNIT 1

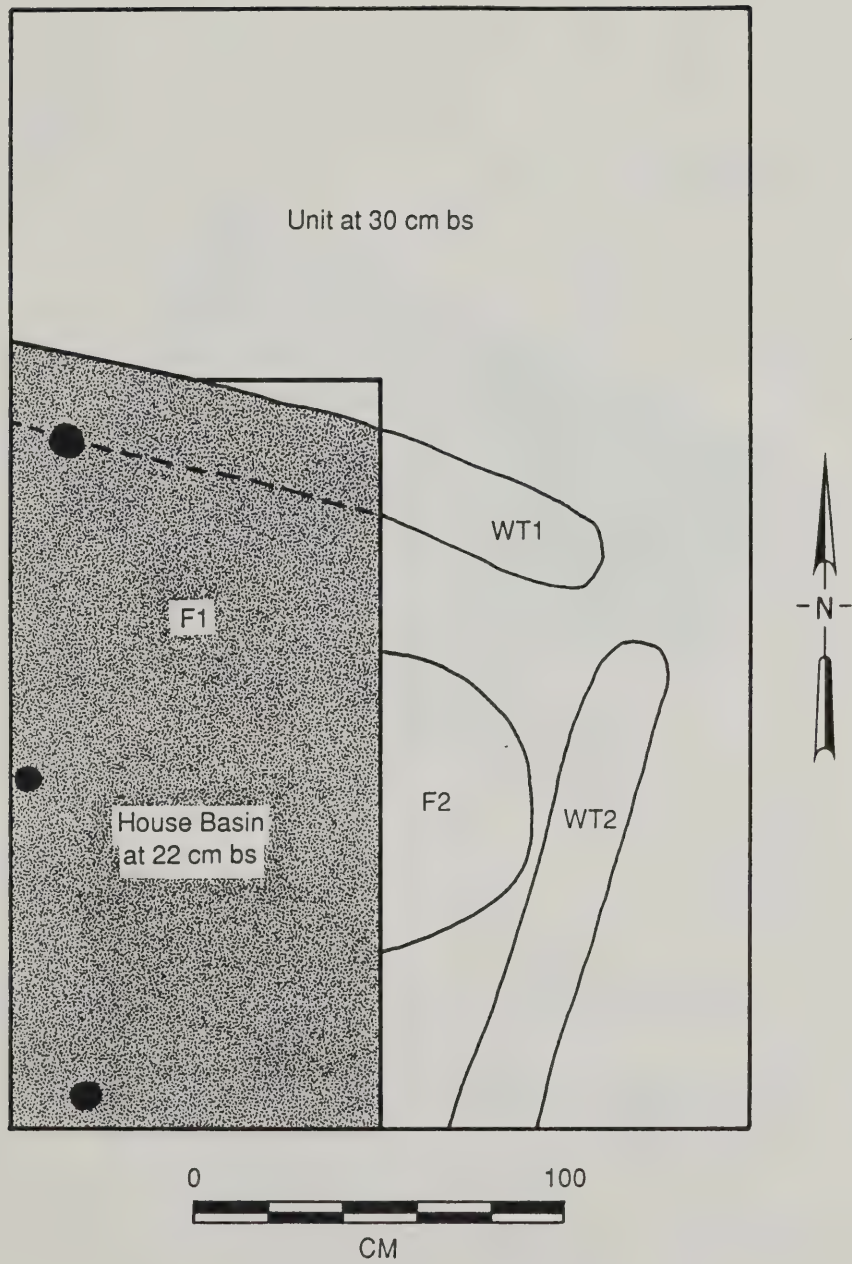


FIGURE 20. Horizontal Plan of House Basin Features in Unit 1.

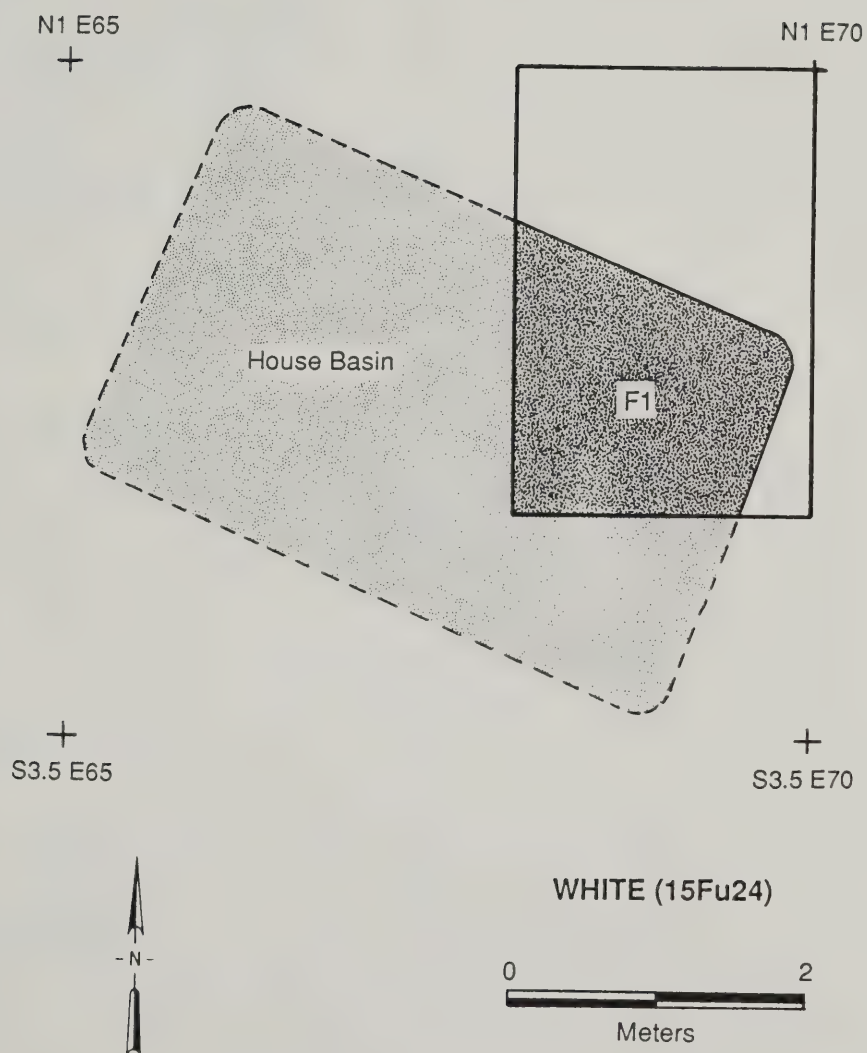


FIGURE 21. House Basin Dimensions Estimated by Soil Coring.

TABLE 16. Proveniences of White Site Artifacts.

| Artifact Class | Plowzone | Structure | Totals |
|---------------------------------------|----------|-----------|--------|
| Ceramics | | | |
| Mississippi Plain | 46 | 12 | 58 |
| Bell Plain | 14 | 2 | 16 |
| Matthews Incised, <u>var. unspec.</u> | 2 | 0 | 2 |
| O'Byam Incised, <u>var. O'Byam</u> | 0 | 1 | 1 |
| Wickliffe Thick | 3 | 3 | 6 |
| Kimmswick Fabric Impressed | 0 | 1 | 1 |
| Baytown Plain | 23 | 1 | 24 |
| Mulberry Creek Cordmarked | 33 | 10 | 43 |
| Unclassified sherds | 3 | 0 | 3 |
| Other Fired Clay Artifacts | | | |
| Pottery Trowel | 1 | 0 | 1 |
| Daub | * | * | * |
| Chipped Stone Tools | | | |
| Projectile Points | 2 | 0 | 2 |
| Bifaces | 2 | 0 | 2 |
| Hoe Fragments and Flakes | 6 | 4 | 10 |
| Modified Cobbles | | | |
| Abrader | 0 | 1 | 1 |
| Other Stone Artifacts | | | |
| Cores | 3 | 1 | 4 |
| Angular Fragments | 7 | 0 | 7 |
| Primary Flakes | 12 | 2 | 14 |
| Secondary Flakes | 22 | 2 | 24 |
| Tertiary Flakes | 14 | 9 | 23 |
| Sandstone | 3 | 14 | 17 |
| Pebbles | 5 | 5 | 10 |
| Red Ochre | 0 | 1 | 1 |
| * Present, but not quantified. | | | |

O'Byam Incised, var. O'Byam

One flared wall bowl rim has interior incised line-filled triangles. The vessel orifice is 22-26 cm. Irregularly spaced, rounded notches occur on the lip interior.

Wickliffe Thick

Funnels account for 4% of the recovered ceramics. No rim sherds were found.

Kimmswick Fabric Impressed

One body sherd was recovered.

Baytown Plain

Coarse paste, grog-tempered plainwares constitute 16% of the assemblage. The vessel forms are bowls and jars.

Mulberry Creek Cordmarked

Cordmarked, grog-tempered ceramics occur as 28% of the sample. The one jar rim is inslanted and folded over, and has a flat lip.

Unclassified Ceramics

Three sherds cannot be classified. One sherd is untempered with a plain surface. Two sherds have Bell Plain pastes and single incised lines on their exteriors.

Other Fired Clay ArtifactsPottery Trowel

One fragment of a pottery trowel with a coarse, grog-tempered paste was recovered from the plowzone of the unit.

Daub

Over 50 kg of daub were collected from the excavation unit. Some fragments have both interior and exterior surfaces present and provide evidence that the wall of this structure was roughly 8-10 cm thick. Squared corner pieces occur and corner fragments with interior post impressions were also recovered. Cordage and weave patterns

indicate that wattle was used to line the structure prior to the application of the daub. Cane or grass was used as an additive to the daub. One exterior wall fragment displays areas of red paint or wash, and is interpreted as evidence of wall decoration.

Chipped Stone Tools

Projectile Points

Two fragments of Madison points were found. One specimen is a heat-treated, Purchase Gravel, basal fragment. The other artifact is a distal end of an unidentified chert.

Bifaces

Two fragments, a medial and a lateral segment, were recovered. Both are Purchase Gravel.

Hoe Fragments and Flakes

One hoe fragment and nine hoe flakes were identified on the basis of surface polish. The hoe fragment and three of the flakes are Dover chert; the remainder are Mill Creek chert.

Modified Cobbles

Abrader

One flat sandstone abrader was found on the house floor. The specimen measures 75 mm long and 45 mm wide.

Other Stone Artifacts

Cores and Debitage

Only a small quantity of debitage was recovered (Table 17). Purchase Gravel is the most common chert, followed by Dover, Mill Creek, and Burlington in that order of frequency. All stages of reduction are present within the Purchase Gravel assemblage, indicating local procurement and local manufacture of Purchase Gravel tools. Dover, Mill Creek, and Burlington cherts appear to have reached the site as tools or cores. The full range of reduction is absent for these types, and specimens with cortex are rare.

Sandstone, Fire-Cracked Rock and Pebbles

Small quantities of these materials were found.

TABLE 17. White Site Chert Debitage Data.

| Class | Purchase Gravel | Mill Creek | Dover | Burlington | Unknown |
|-------------------|--------------------|---------------|-------|------------|---------|
| Tools | 3 | 5 | 4 | 0 | 2 |
| Cores and Cobbles | 5 | 0 | 1 | 0 | 0 |
| Angular Fragments | 4 | 1 | 1 | 0 | 1 |
| Primary Flakes | 13 | 0 | 0 | 0 | 1 |
| Secondary Flakes | 14 | 0 | 2 | 2 | 6 |
| Tertiary Flakes | 9 | 2 | 8 | 2 | 2 |
| Total (#) | 48 | 8 | 16 | 4 | 12 |
| % of Total | 55 | 9 | 18 | 4 | 14 |
| % Utilized | 25 | 0 | 0 | 12 | 30 |
| % Heat-altered | 49 | 12 | 0 | 100 | 25 |
| Weight (g) | 581 | 24 | 69 | 11 | 42 |
| % Weight | 80 | 3 | 9 | 1 | 6 |

Faunal Remains

(Paul P. Kreisa)

A total of 295 bone elements were recovered by flotation and hand excavation (Table 18). All of the specimens are fragmentary and over 95% of them are burnt.

Mammal remains comprise most of the classifiable elements. One of the 19 specimens is from a large mammal, whitetail deer, and two are from medium-sized mammals. One rodent element is present. Three turtle shell fragments are also present, one of which is from a box turtle. Three fish bones occur, and one is identifiable to the family Centrarchidae.

The recovered remains constitute a small sample of the animals hunted and gathered by the site occupants. Few inferences can be made concerning the faunal exploitative patterns as represented by the remains. A broad-based pattern including many classes with an emphasis on mammals is suggested. This would duplicate findings elsewhere at Mississippian sites (Lewis 1974; Smith 1975).

Botanical Remains

(S. Justine Woodard)

Two 10 l flotation samples were collected from the structure. A hand-collected sample from the surface of the interior pit was also analyzed (Table 19).

Wood

Wood charcoal was the most commonly encountered plant remain. A total of 329 wood fragments were recovered from the flotation samples. Only a small percentage could be identified. Bald cypress (Taxodium distichum) and an unidentified conifer are the most common wood remains. Maple (Acer sp.) and birch (Betula sp.) examples also occur. All of the fragments analyzed from the pit feature were birch. The high frequency of bald cypress and birch wood within the structure suggests their use as preferred building materials.

Nutshell

A total of 53 nutshell fragments were recovered. Hickory nutshell is the dominant type present, accounting for over 75% of the remains. Pecan nutshell is the next most frequent (22%) with two Juglandaceae (hickory or walnut) and two unidentified nutshells also present.

TABLE 18. White Site Faunal Remains by Taxonomic Class.

| Class | Number of Identified Specimens | Number of Unidentified Specimens | Total Number of Specimens | Percent of all Specimens |
|------------|--------------------------------------|--|---------------------------------|--------------------------------|
| Vertebrate | 0 | 292 | 292 | 92 |
| Mammal | 0 | 19 | 19 | 6 |
| Reptile | 3 | 0 | 3 | 1 |
| Fish | 1 | 2 | 3 | 1 |
| | ----- | ----- | ----- | ----- |
| Totals | 4 | 313 | 317 | 100 |

TABLE 19. White Site Botanical Remains.

| Scientific Name | Flotation | Feature 2 (Surface) | Totals |
|---|-----------|------------------------|--------|
| WOOD (All Fragments) | 329 | * | 329 |
| <u>Acer</u> sp. (maple) | 1 | 0 | 1 |
| <u>Betula</u> sp. (birch) | 1 | * | 1 |
| <u>Taxodium distichum</u> (bald cypress) | 7 | 0 | 7 |
| non-ring porous (conifer) | 4 | 0 | 4 |
| Unidentified | 25 | 0 | 25 |
| NUTSHELL (All Fragments) | 38 | 25 | 53 |
| <u>Carya</u> spp. (hickory) | 28 | 12 | 40 |
| <u>Carya illinoensis</u> (pecan) | 4 | 10 | 14 |
| Juglandaceae (hickory/walnut) | 4 | 3 | 7 |
| Unidentified | 2 | 0 | 2 |
| SEEDS (Total) | 2 | 0 | 2 |
| <u>Diospyros virginiana</u> (persimmon) | 1 | 0 | 1 |
| Unidentified | 1 | 0 | 1 |
| TROPICAL CULTIGEN | | | |
| <u>Zea mays</u> (maize) cupules | 17 | 17 | 34 |
| OTHER PLANT PARTS | | | |
| Monocot Stem | 16 | 0 | 16 |

* A total of 2.3 g of highly fragmented wood charcoal were present, and probably represent a single piece of Betula sp. wood.

Seeds

Only two seeds are present in the sample. One can be tentatively identified as persimmon and the other is unidentifiable. Persimmon is common in the Mississippian components at the nearby Adams site (Edging and Dunavan 1986).

Tropical Cultigen

Maize is the only identified tropical cultigen present. The remains of 34 cupules were recovered. The small sample is characterized by a high row number and a small cupule width.

Discussion

The recovered botanical remains show little difference from those collected at the Adams site, which is located only a short distance from White (Figure 1). The primary difference between the samples is the wider diversity of species present at Adams as a result of the greater number of flotation samples analyzed from there. Maize was an important element of the diet, and was supplemented by nuts and seeds. House construction utilized soft woods from the adjacent bottoms with bald cypress and birch being especially preferred.

Discussion of Excavation Results

The uncovering of a Mississippian house was the major result of the test excavation. Located just beneath the plowzone, the structure is well-preserved as a result of the intense fire that brought about its destruction. The house was occupied during the Medley phase (A.D. 1300-1500). Subsistence and resource procurement patterns were similar to other contemporaneous Mississippian sites, including the nearby Adams town site.

White occupies an intermediate level within the local Mississippian settlement hierarchy. At present, it is the only known village within 3 km of Adams. Small hamlets or farmsteads have been reported, but none approach the size of the White site. The absence of mounds at White suggests that the socio-political and religious functions associated with mound complexes (e.g., Knight 1986) were not conducted at this site. This would imply that the White site occupants relied upon Adams as the local center of those activities.

Older components are also present at the site. Surface and excavated collections include relatively high frequencies of Baytown Plain and Mulberry Creek Cordmarked sherds, baked clay objects, a slate gorget, and a Hardin Barbed projectile point. The rim attributes of the ceramics suggest that a Cane Hills component is present. Berkley and Belmont phase occupations may also occur, but these possibilities cannot be verified with the available data.

INDIAN CAMP LAKE

Site Description and Setting

The Indian Camp Lake site (15CE19), is located in the Mississippi river floodplain west of the community of Berkley (Figure 1). The site occupies the highest portion of the bottoms with elevation ranging between 94 and 100 m (310 and 330 feet A.M.S.L.). The soil is a silt loam and the natural vegetation was a sweetgum-elm cane ridge forest (Lewis 1974:21). This vegetation was cleared for agricultural purposes in historic times. A local farmer in his late seventies remembers this location being called the Beech Barrens, in reference to the scattered large beech trees amid grass and secondary growth.

The precise site boundaries are difficult to determine accurately. Surface materials occur from the bluff base west to Indian Camp Lake and from a gravel road north approximately 600 m (Figure 22). The delimited area is about 51 ha. The UIUC investigation focused on the portion of the site that lies to the north of the gravel road. Prehistoric surface material is concentrated on the extinct natural levee that borders Indian Camp Lake.

The site was originally reported by Frank Bodkin in 1978. His several visits to the site have yielded a sizable surface collection. Analyses of the surface collected artifacts suggest that the location was occupied for a long time, but the major occupation occurred during the Late Woodland period.

Excavations and Stratigraphy

Test excavations were conducted by Sussenbach and UIUC students in March of 1986. Two 1 by 2 m test units were excavated. The location of each unit is measured from a datum stake placed west of the site along the slope to the bottoms.

Unit 1 (N0-2, E12-13)

This unit was located in an area of dense surface materials along the levee edge. The plowzone consisted of a 20 cm deep brown (10YR4/3) sandy loam. The remains of two ceramic vessels were found at the base of the plowzone. The vessels are classified as Crab Orchard Fabric Impressed and Crab Orchard Cordmarked, respectively. Beneath the plowzone was a 10-15 cm deep midden composed of soil that was similar in color and texture to the plowzone, but slightly more compact. Artifacts from this level, especially potsherds, were most common in the northern portion of the unit. Sherds were predominantly grog-tempered with cordmarked surfaces. One flotation sample was

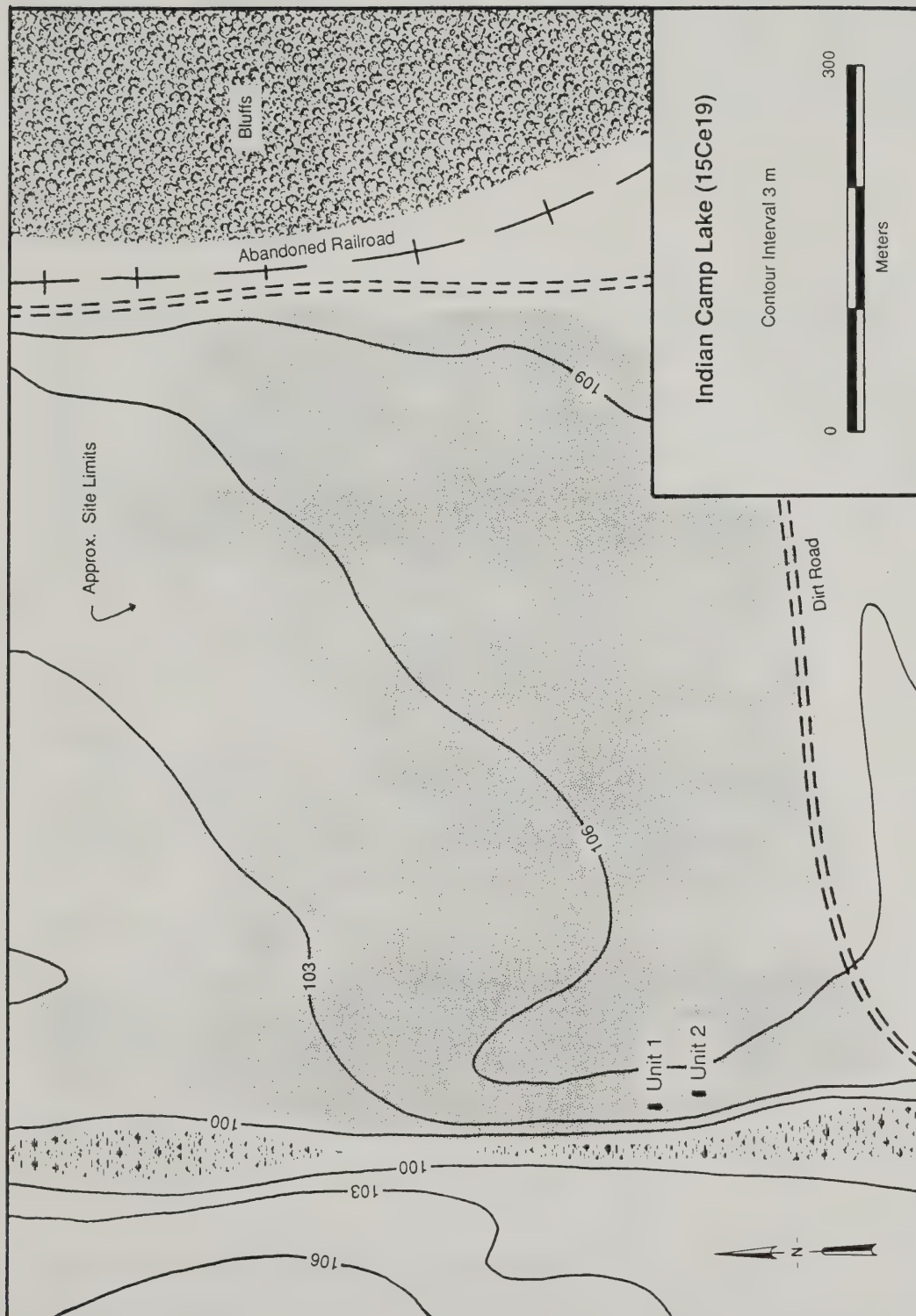


FIGURE 22. Topographic Map of the Indian Camp Lake Site.

collected from this midden zone. No features were observed. A radiocarbon age estimate based on wood and nutshell from the midden is 1599 (1514) 1427 B.C. (ISGS-1542; 3220 \pm 70 BP). This date provides a maximum age estimate for the midden. The date is considerably older than expected for a ceramic bearing midden, and it is inferred that most of the dated wood sample was redeposited from an older occupation at this locus. Datable samples possessing a high degree of certainty of association are unavailable.

Unit 2 (S76-78, E22-23)

This unit was placed along the top of the extinct natural levee in an dense area of surface materials. The 25 cm deep plowzone was a dark brown sandy loam. The midden was about 15 cm thick and was similar in soil color and texture to the plowzone. A flotation sample was collected from this level. A zone of silty sand was encountered at the base of the midden. Diffuse soil stains were visible within this zone, but, upon excavation, they failed to maintain their shape and disappeared entirely after 15 cm of this zone was removed. The excavation was halted at this level due to the increasing moisture content of the sandy matrix, even though sterile soil was not yet encountered.

Cultural Remains

Ceramics

The ceramic assemblage contains pottery assignable to Middle Woodland through Mississippi period components. A total of 259 sherds, including 17 rims, comprise the analyzed sample (Table 20).

Mississippi Plain

Coarse paste, shell-tempered plainwares account for 5% of the sherd assemblage. All of the specimens were recovered from Unit 2. No rims sherds are present and no evidence of appendages occur.

Bell Plain

A single shell-tempered, fine paste sherd was present in Unit 2.

Kimmswick Fabric Impressed, var. Marshall

One rim sherd of this pan variety was recovered from Unit 2. The coarse, well-compacted, grog-tempered paste of this sherd is characteristic of this variety. The fabric-impressed exterior has been smoothed over. The lip is inslanted and the maximum vessel diameter cannot be estimated.

TABLE 20. Proveniences of Indian Camp Lake Site Artifacts.

| Artifact Class | Unit 1 | Unit 2 | Totals |
|-------------------------------|--------|--------|--------|
| Ceramics | | | |
| Mississippi Plain | 0 | 14 | 14 |
| Bell Plain | 0 | 1 | 1 |
| Kimmswick Fabric Impressed | | | |
| <u>var. Marshall</u> | 0 | 1 | 1 |
| Baytown Plain | 7 | 14 | 21 |
| Mulberry Creek Cordmarked | | | |
| <u>var. unspecified</u> | 54 | 119 | 173 |
| <u>var. Sandy Branch</u> | 4 | 9 | 13 |
| Crab Orchard Fabric Impressed | 20 | 0 | 20 |
| Crab Orchard Cordmarked | 8 | 0 | 8 |
| Unclassified Ceramics | 2 | 6 | 8 |
| Other Fired Clay Artifacts | | | |
| Baked Clay Objects | 42 | 36 | 78 |
| Daub | 168 | 1329 | 1497 |
| Mud-Dauber Nest | 0 | 1 | 1 |
| Chipped Stone Tools | | | |
| Projectile Point | 0 | 1 | 1 |
| Bifaces | 4 | 1 | 5 |
| Hoe Flake | 0 | 1 | 1 |
| Other Stone Artifacts | | | |
| Cores | 4 | 9 | 13 |
| Angular Fragments | 33 | 44 | 77 |
| Primary Flakes | 33 | 30 | 63 |
| Secondary Flakes | 30 | 32 | 62 |
| Tertiary Flakes | 13 | 27 | 40 |
| Fire-Cracked Rock | 42 | 36 | 78 |
| Sandstone | 151 | 1429 | 1580 |
| Pebbles | 63 | 1880 | 1943 |
| Pumice | 1 | 6 | 7 |
| Red Ochre | 2 | 6 | 8 |
| Bone Tools | | | |
| Awl | 1 | 0 | 1 |

Baytown Plain (Figure 23,a-b)

Grog-tempered plainwares represent 8% of the sherd total. The only identified vessel form is the bowl.

Bowls (2) - The estimated vessel diameter of 14-18 cm is similar to that of Mulberry Creek Cordmarked bowls. One rim with a vertical shape and a pointed lip has a row of vertical fingernail impressions on the vessel exterior below the lip. The second specimen is much thicker and has a coarse paste. The rim is vertical and the lip is inslanted. Decoration consists of a dowel impressed lip and notches along the rim exterior. Below the rim is a row of diagonal impressions that were applied by a cord wrapped stick.

Mulberry Creek Cordmarked, var. unspecified (Figure 23,c-h)

Cordmarked, grog-tempered ceramics account for 55% of the recovered sherds. Pastes are medium to coarse and have a slightly sandy texture. Both jars and bowls are present within the assemblage. The sample shows a high percentage of decorated rims.

Jars (5) - Orifice diameters range from 14-26 cm. Rim shapes include inslanted (2), incurvate (1), vertical (1), and everted (1) forms. Flat lips are common (3), but one outslanted and one rounded specimen also occur. Two rims are folded; one is decorated with exterior lip notches, and the other has molded impressions placed below the lip. Another rim has a notched cordmarked lug. The final specimen has a row of punctations placed below the lip.

Bowls (3) - Orifice diameters of the two measurable rims are 10-18 cm. Both specimens have vertical rim profiles and rounded lips. The third specimen has an outslanted rim and a flat lip. Decoration consists of an folded rim with a row of punctations along the cordmarked lip.

Undetermined (2) - Two rims were not classifiable due to their small size. Both have vertical rims and lips are flat or rounded.

Mulberry Creek Cordmarked, var. Sandy Branch

This variety is characterized by a fine, well compacted grog-tempered paste. Five percent of the sherds in this collection were sorted into this variety. One rim sherd was found. It is from a bowl with a vertical rim shape and a rounded lip.

Crab Orchard Fabric Impressed (Figure 24)

Most of these sherds appear to be from a single vessel that was found at the bottom of the plowzone in Unit 1. The vessel has a flat bottom that measures 10 cm in diameter. The walls expand outward from the base to an estimated diameter of 30-40 cm. The base is 9-11 mm



FIGURE 23. Ceramics: a-b, Baytown Plain; c-h, Mulberry Creek Cordmarked; i-j, Crab Orchard Cordmarked.

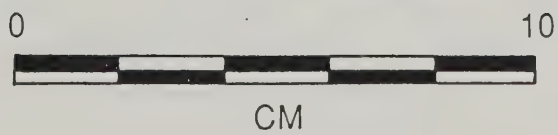


FIGURE 24. Crab Orchard Fabric Impressed.

thick and the wall thickness is 8-10 mm. The temper is grog with minor inclusions of grit. The interior surface is roughly smoothed with gouge marks on the walls near the base. Fabric or cord-wrapped stick impressions cover the exterior and are partially smoothed over on the lower wall and base. The vessel is comparable to descriptions of Crab Orchard Fabric Impressed vessels by Maxwell (1951) and Butler and Jefferies (1986).

Crab Orchard Cordmarked (Figure 23,i-j)

All of these sherds were found in the same level of Unit 1 as the Crab Orchard Fabric Impressed material. They are also probably from one vessel. Two vertical-sided jar rims have estimated vessel diameters of 30-34 cm. The lips are flat and cordmarked. Each rim shows a row of exterior-impressed bosses placed 1.5 to 2 cm below the lip. This rim treatment is common in southern Illinois assemblages after A.D. 1 (Butler and Jefferies 1986; Maxwell 1951). The body sherds assigned to this type have the same paste and surface treatment as the two rims. Crab Orchard Cordmarked differs from Mulberry Creek Cordmarked in several ways. First, the temper of Crab Orchard sherds is both grog and bone and is usually larger than the grog temper of Mulberry Creek Cordmarked. Second, the cordmarking on the Crab Orchard vessel appears to have been applied continuously from the top of the vessel to its base, almost in a "rolled on" fashion. This contrasts markedly with the overlapping, paddled cord impression patterns that are typical of Mulberry Creek Cordmarked sherds.

Unclassified Ceramics

Two Bell paste sherds exhibit single incised lines. Three grog-tempered sherds also show cord impressions on the interior surface and cordmarked exteriors.

Other Fired Clay Artifacts

Baked Clay Objects (Figure 25,a-f)

The specimens include conical, biscuit and torpedo-shaped forms. Paste colors range from tan to red-brown. A few examples show incised or cordmarked surfaces. There are few large inclusions in these baked clay objects, but when present they are either grit or grog particles.

Daub

Daub fragments were found in all excavated contexts. Some specimens clearly show impressions of cane or grass, but most are small fragments. Some of the clay fragments classified as daub may be pieces of baked clay objects.

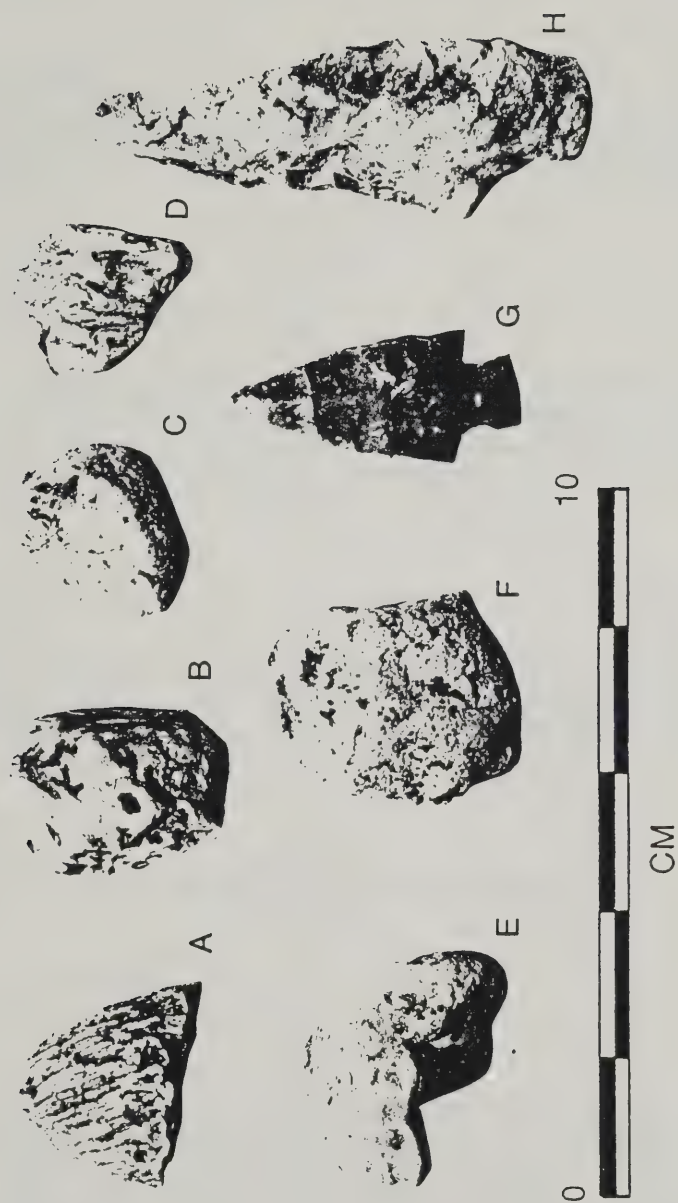


FIGURE 25. Fired Clay Artifacts and Stone Tools: a-f, baked clay objects; g, projectile point; h, biface.

Clay Bead

A round clay bead was recovered from Unit 1. The specimen measures 7 mm in diameter with a 2 mm central hole. The hole was formed while the clay was wet, leaving a raised protrusion at one end.

Mud-Dauber Nest

A mud-dauber nest was found in Unit 2. Its presence implies that the remains of a burned structure may lie close to this location.

Chipped Stone Tools

Projectile Point (Figure 25,g)

One complete Purchase Gravel chert specimen was recovered from Unit 2 at 35 cm below the surface. The point measures 3.5 cm long, 1.5 cm wide, and 0.7 cm thick. The lateral blade margins are excurvate and the stem is expanding. The edges and base have been slightly ground.

Bifaces (Figure 25,h)

Five bifaces were collected. One specimen, made from an unidentified chert, was hafted. The remaining biface fragments display no evidence of hafting. They are all of Purchase Gravel chert.

Hoe Flake

A single Mill Creek chert hoe flake was found in Unit 2.

Other Stone Artifacts

Debitage

A total of 389 pieces of chert debris were recovered, including 234 small flakes that were not analyzed. Purchase Gravel is the most common chert, followed by Glacial Gravel, St. Louis, Burlington, Dover, and Mill Creek. Only the locally available Purchase Gravel and Glacial Gravel types occur in all reduction stages (Table 21). The imported chert types probably reached the site as finished tools. The effects of heat-treatment and utilization are most common on the Purchase Gravel chert.

Unmodified Rock

A variety of raw stone materials were transported to the site and used (Table 21). The pebbles may occur naturally in the soil, but the

TABLE 21. Indian Camp Lake Site Chert Debitage Data.

| Artifact Class | Purchase | | St. | | Mill | |
|-------------------|----------|------------|-------|-------|-------|----------|
| | Gravel | Burlington | Louis | Dover | Creek | Unident. |

| | | | | | | |
|-------------------|------|----|----|---|----|-----|
| Tools | 5 | 0 | 0 | 0 | 1 | 1 |
| Cores | 13 | 0 | 0 | 0 | 0 | 0 |
| Angular Fragments | 62 | 1 | 0 | 0 | 0 | 14 |
| Primary Flakes | 61 | 0 | 0 | 0 | 0 | 2 |
| Secondary Flakes | 53 | 1 | 1 | 0 | 0 | 7 |
| Tertiary Flakes | 16 | 2 | 15 | 2 | 1 | 4 |
| <hr/> | | | | | | |
| Total (#) | 110 | 4 | 16 | 2 | 2 | 28 |
| % of Total | 80 | 1 | 6 | 1 | 1 | 10 |
| % Utilized | 8 | 0 | 0 | 0 | 50 | 0 |
| % Heat-altered | 48 | 25 | 0 | 0 | 50 | 0 |
| Weight (g) | 1961 | 11 | 8 | 1 | 2 | 113 |
| % Weight | 95 | * | * | * | * | 5 |

* less than 1% of total.

other classes of debris would had to have been brought to the site. This category includes eight pieces of red ochre and seven pieces of pumice. The pumice probably originated in the Missouri River drainage, and was collected from river sand bars. Pumice abraders occur occasionally in prehistoric assemblages in the Cairo Lowland (Williams 1974). None of the specimens from Indian Camp Lake show evidence of utilization.

Bone Tools

Awl

One whitetail deer antler tine had been modified into an awl. The working surface of the tine shows heavy polish.

Faunal Remains

(Paul P. Kreisa)

The two test excavations yielded 652 skeletal elements of which 417 specimens are identifiable to at least the family level. Due to the high incidence of burning (89%) and the extent to which the material is fragmented (98% of all elements are fragments), only 23 elements could be identified to the genus or species level.

Mammals comprise 60% of the assemblage (Table 22). Whitetail deer and rabbit are the only identified taxa. Whitetail deer elements probably also constitute a large proportion of the unidentified mammal remains. A single element was identified as bird. Turtles, represented by shell fragments, were the most common reptile. One fragment was identified as box turtle. Three fish bones were also present, including one large vertebrae, but could not be identified to the genus or species level.

The faunal remains suggest that the exploitative pattern characteristic of Mississippian culture in the region changed little from that in existence during the Woodland periods. The emphasis on whitetail deer within a broad-based procurement strategy is replicated in this sample, which includes Woodland and Mississippian faunal remains.

Botanical Remains

(S. Justine Woodard)

Botanical remains were analyzed from two 10 l flotation samples and from hand-excavated contexts. Recovered remains were relatively scarce with a total of only 16 g of charcoal being present.

TABLE 22. Indian Camp Lake Faunal Remains by Taxonomic Class.

| Class | Number of Identified Specimens | Number of Unidentified Specimens | Total Number of Specimens | Percent of all Specimens |
|-----------------------|--------------------------------------|--|---------------------------------|--------------------------------|
| Vertebrate | 0 | 235 | 235 | 36 |
| Mammals | 21 | 372 | 393 | 60 |
| Mammal/Bird | 0 | 7 | 7 | 1 |
| Birds | 0 | 1 | 1 | * |
| Reptiles | 13 | 0 | 13 | 2 |
| Fish | 2 | 1 | 3 | * |
| Totals | 36 | 616 | 652 | 99 |
| * Less than 1 percent | | | | |

Wood

Wood remains were highly fragmented, resulting in a large number being unidentifiable. Only three wood types, birch, mulberry, and locust, were present (Table 23). All of these trees are common locally.

Nutshell

Nut remains were recovered in larger numbers than were wood remains. Hickory, black walnut, and acorn nutshells were identified. The dominance of hickory suggests that upland resources were exploited.

Seeds

Only four seeds were recovered. Three are identified as American lotus (Nelumbo lutea). The remaining seed is goosefoot (Chenopodium spp.). Harvesting of American lotus could have taken place from June to October in nearby backwater habitats.

Discussion

Few inferences can be drawn from this small, fragmented sample. The remains are similar to Woodland assemblages elsewhere in the Midwest and Mid-South in that few seeds are present and the nut/wood ratio is relatively high (0.72 for flotation samples and 1.86 for all remains). Although the starchy/oily seed complex was cultivated at this time elsewhere, only a single chenopodium seed of this complex is present in the Indian Camp Lake samples. No maize or other tropical cultigens were recovered.

Discussion of Excavation Results

The test excavations document a long occupation at the site, minimally including Middle Woodland, Late Woodland, and Mississippi period components. Older activity is suggested by surface collected artifacts, the absolute age determination, and the stratigraphic record of Unit 1.

The Unit 1 excavation encountered older deposits than in the Unit 2 locality. The Crab Orchard vessels found at the bottom of the plowzone in Unit 1 occur in southern Illinois in contexts that date to A.D. 1-200. Below the plowzone was an older midden containing cordmarked and plain sherds, stone artifacts, and baked clay objects. All of the sherds from the lower midden were classified as Mulberry Creek Cordmarked or Baytown Plain. This midden apparently dates prior to the Middle Woodland period.

The bulk of the Unit 2 deposits represent Late Woodland and Mississippi period components. The Mississippi period occupation, which

TABLE 23. Indian Camp Lake Site Botanical Remains.

| Scientific Name | Unit 1 | | Unit 2 | | Totals |
|--|----------|------|----------|------|--------|
| | Screened | Flot | Screened | Flot | |
| WOOD (All Fragments) | 0 | 30 | 11 | 55 | 96 |
| <u>Betula</u> sp. (birch) | 0 | 2 | 0 | 5 | 7 |
| <u>Gleditsia</u> sp. (locust) | 0 | 0 | 10 | 0 | 10 |
| <u>Morus</u> sp. (mulberry) | 0 | 0 | 0 | 6 | 6 |
| diffuse porous | 0 | 0 | 0 | 1 | 1 |
| ring porous | 0 | 2 | 0 | 0 | 2 |
| Unidentified | 0 | 16 | 1 | 13 | 30 |
| Wood Fragments Analyzed | 0 | 20 | 16 | 20 | 56 |
| NUTSHELL (All Fragments) | 13 | 55 | 49 | 6 | 123 |
| <u>Carya</u> spp. (hickory) | 10 | 5 | 46 | 0 | 61 |
| <u>Juglans nigra</u> (black walnut) | 1 | 0 | 2 | 0 | 3 |
| Juglandaceae (hickory/walnut) | 1 | 50 | 1 | 5 | 57 |
| <u>Quercus</u> sp. (oak) | 0 | 0 | 1 | 0 | 1 |
| SEEDS (Total) | 0 | 3 | 0 | 1 | 4 |
| <u>Chenopodium</u> spp. (goosefoot) | 0 | 1 | 0 | 0 | 1 |
| <u>Nelumbo lutea</u> (American lotus) | 0 | 2 | 0 | 1 | 3 |
| OTHER PLANT PARTS | | | | | |
| Monocot Stem | 0 | 0 | 1 | 0 | 1 |
| Fungal Fructification | 0 | 0 | 24 | 6 | 30 |

probably occurred during the James Bayou phase, appears to have been less intensive than the Late Woodland one. The ceramics include Mississippi Plain, Bell Plain, Kimmswick Fabric Impressed, var. Marshall, and Mulberry Creek Cordmarked, var. Sandy Branch. None of the Mississippi period decorated types were found. The Woodland ceramics from Unit 2 are largely assignable to the early portion of the Late Woodland period. Vessel rims in this assemblage are commonly decorated with punctations or notches placed on the exterior at or below the rim. Cordmarked lips occur on 20% of the rims. The form and quantity of decorated rims are similar to rim modes of the Rosewood and Mund phases (A.D. 300-600) in the American Bottom of western Illinois (Kelly et al. 1984). A major difference between the two regions is the high frequencies of exterior rim folds and bowls in the Indian Camp Lake site assemblage.

The subsistence data, gathered primarily from Woodland contexts, reflects a broad based faunal procurement strategy that emphasized mammals, especially whitetail deer. The gathering of nuts and seeds provided storable resources to complement seasonally available resources. The different depositional history of the two units suggests that the large size of the site is partly a function of repeated occupations, but not necessarily large occupations. The site location provides access to a wide range of physiographic zones and diverse resources.

DISCUSSION OF EXCAVATION RESULTS

The Marshall, White, and Indian Camp Lake sites contain extensive, intact cultural deposits and possess considerable potential for further research. The test excavations contribute significantly to the scientific understanding of the archaeology of this region. This section assesses the contribution of the excavation results to the development of a regional sequence.

Prior to 1983 the regional chronology was based entirely on investigations in the Cairo Lowland. This sequence was fundamentally a weak one since (1) it attempted to combine cultural and temporal units, and (2) it was based principally on cross-dated artifacts rather than on stratigraphy and absolute dates (viz., Cottier 1977a; Hopgood 1969; Phillips 1970; Williams 1974; Williams 1954). In 1983 Lewis began replacing this sequence with one that is based strictly on temporal units. Phase definition to date has focused on the Mississippi period (Lewis 1983, 1986, 1987a). This site survey and testing project has provided the basis for outlining the major features of three Middle and Late Woodland phases (Sussenbach et al. 1986) and has contributed significantly to the James Bayou phase definition. Each phase and its content are reviewed below.

Belmont (A.D. 200-400)

The Belmont phase spans the last two centuries of the Middle Woodland period, as it is usually delimited (e.g., Griffin 1967). Habitation sites tend to be small and are distributed across the various physiographic zones. Horticulture probably contributed a small amount to a diet that was based primarily on hunting, fishing, and collecting nuts and seeds. Cordmarked sherds dominate the ceramic assemblage. Minor quantities of plain sherds are also present. Fabric impressed vessels decline in frequency and are absent by the end of the phase. Common vessel forms are jars and small bowls. Vessel decoration is limited to exterior rim folds. Baked clay objects, which were presumably used as stone substitutes in earth ovens, have been found in Belmont phase assemblages. The lithic assemblage is dominated by locally available cherts.

Berkley (A.D. 400-600)

There appear to be no fundamental changes in settlement and subsistence patterns from the Belmont phase, but this may reflect nothing more than the few data upon which these phase definitions are based. The major difference in the ceramic assemblage is the high incidence of decorated jar and bowl rims. Decoration consists of notches or punctations at or below the rim on the vessel exterior. These punctations and notches occur on both simple and folded rims.

Dowel-impressed and cordmarked lips occur, as do cord-wrapped stick impressions on vessel surfaces. The lithic industry continues to be based on local cherts.

Cane Hills (A.D. 600-900)

The Cane Hill phase brackets three centuries of prehistory that often fall into the Hoecake phase as it is defined in the Cairo Lowland (Williams 1974). We introduce this phase to avoid the general confusion that surrounds both the Hoecake phase and the site for which it was named.

A site hierarchy developed during this phase, and some sites display mound and plaza arrangements with associated village areas (Lewis 1983). These sites represent the oldest components in a long history of town sites in the region. A reduction in the overall range of preferred site locations also appears to have occurred. Most Cane Hills sites occur in bluff or natural levee locations. Compared to preceding phases, there are fewer sites in creek valley locations or in upland interfluvial or small stream settings. Subsistence patterns are marked by the increasing importance of maize and other plants, and agriculture becomes a common mode of food production by the end of this phase.

The ceramic assemblage consists mainly of Mulberry Creek Cordmarked and Baytown Plain. The latter type tends to increase in frequency at the expense of the former. Larto Red becomes increasingly common late during this phase. Vessel form diversity increases with the addition of pans, funnels, hooded bottles, and inslanted rim jars to the assemblage. Shell-tempered ceramics begin to be manufactured, but it is unclear just when this practice begins or how rapidly it increases in frequency. Mississippi Plain is the most common of the shell-tempered types, followed by Bell Plain, Old Town Red, and Crosno Cordmarked. Kersey Incised and Wheeler Check Stamped occur, but not in all components and never in more than minor quantities. Yankeetown series ceramics occur in small amounts toward the end of the phase. The stone tool assemblage includes a large quantity of non-local cherts relative to older phases. Mill Creek and Dover tools, especially Mill Creek hoes, became commonplace in assemblages by A.D. 900.

James Bayou Phase (A.D. 900-1100)

The major dimensions of this phase have been described by Lewis (1986, 1987b). Our comments are framed specifically in terms of the contribution of the Marshall site investigation to the delineation of the phase. The economic base of the Marshall site component was maize horticulture or agriculture, supplemented by hunting and gathering. The ceramic assemblage is comprised mostly of plain, cordmarked, fabric impressed, and red-filmed utility wares. Pastes tend to be tempered with grog, shell, or mixed shell and grog.

Major technological and stylistic changes in pottery technology occurred during the Marshall site occupation. The changes in question appear to be in situ transitions that began during the Cane Hills phase and were completed during the James Bayou phase. They are generally similar to changes in ceramic technology that have been documented for other parts of the Mid-South during the same interval. Late Woodland ceramic assemblages in the region are dominated by grog-tempered ceramics with plain or cordmarked surfaces and coarse, convoluted pastes. The grog-tempered ceramics from the oldest contexts at Marshall differ in that pastes are finer, more homogeneous, and more compact. This technological change was accompanied by certain stylistic shifts, although continuity with older traditions can be seen in the continued use of the exterior rim fold mode, the typical absence of decoration, and the general surface treatment characteristics. Other changes are those of vessel form diversity and the increasing frequency of red-filmed surfaces. Jars tend to have incurved rim shapes. Some loop handles occur. Red-filming is a common attribute; plain vessels could be filmed on the exterior, interior, or on both surfaces; the interior surfaces of cordmarked and fabric impressed vessels were also filmed.

The use of shell temper gradually replaced grog temper in much of the ceramic assemblage, but it did so rather slowly and never completely replaced the practice of grog-tempering in the Ohio-Mississippi rivers confluence region. Temper choices simply reflected potters' knowledge of the capabilities of different clay sources and the intended use of different kinds of vessels.

Trends in surface finish, decoration, and vessel shape that began when grog-tempered ceramics dominated assemblages continue as shell-tempered types increase in frequency. For example, the only major difference of Crosno Cordmarked from older cordmarked material is the shell temper in the former. The exterior rim fold mode can even be found on Crosno Cordmarked sherds. The frequencies of Mississippi Plain and Crosno Cordmarked reflect the same relative trends in abundance that were noted earlier between Baytown Plain, var. Mayfield and Mulberry Creek, var. Sandy Branch. Old Town Red, replaces Larto Red, var. Carlisle in approximately the same frequency that Larto Red formerly held. The lack of decoration that characterized the grog-tempered assemblage is maintained, and jars are similar in size and shape. These overall changes in ceramics must have occurred prior to A.D. 1100. This estimate is based both on absolute age determinations for ceramic assemblages in the Cairo Lowland, and by comparison to dated ceramic assemblages in surrounding regions.

The Baytown-Mississippian Dichotomy

The Marshall site investigation demonstrates once again that the traditional Baytown-Mississippian dichotomy is false. The dichotomy required that cordmarked and plain, grog-tempered sherds be treated as the inevitable products of Baytown cultural groups during the Baytown period, while shell-tempered sherds of any type were to be treated as Mississippian products made during the Mississippi period. The problem

can be traced directly to the difficulties of utilizing material traits, especially ceramic attributes, to define cultural and temporal units. The terms Baytown and Mississippi(an) have been used (1) to describe material assemblages, (2) as cultural terms, and (3) to denote units of time. Unfortunately, these terms are of limited value as archaeological constructs if they must bear the weight of all three connotations.

Various attempts have been made to establish "transitional" units that combine one or more of these aspects. Notable examples from the Ohio-Mississippi Confluence region include the Wolf Island (Hopgood 1969) and Beckwith (Phillips 1970) phases, which were based primarily upon ceramic assemblages that contained both "Baytown" and "Mississippian" traits. Those phases, along with the Hoecake phase (Williams 1974), were included within the Baytown cultural tradition, and accorded a Baytown temporal placement despite traits that were "Mississippian." The preliminary report on the Marshall site (Sussenbach 1985) also fell into this general pattern in some respects by assuming a large Late Woodland period occupation at the Marshall site on the basis of the ceramic assemblage composed of "Baytown-like" types.

The confusion engendered by the use of Baytown and Mississippian as cultural, temporal, and material assemblage units has hindered attempts to understand local patterns of prehistoric culture change. The temporal framework made it difficult to document those sites that date to the time interval when significant cultural change were taking place. Many early Mississippian components went unidentified because they were placed within a Baytown cultural unit that, by virtue of the requirements of the temporal framework, had to date to the Baytown period. The beginning date for the Mississippi period widely in use prior to 1985 was A.D. 1100. The excavations at Marshall have shown that while this is a good estimate for the establishment of a ceramic assemblage dominated by Mississippi Plain and Bell Plain types, maize agriculture and nucleated towns, perhaps with platform mounds and plazas, predate this time. Thus, some Mississippian cultural traits precede "classical" Mississippian ceramics. This is hardly surprising given a local trajectory for Mississippian development. Significant information on the processes that lead to this development is present at those sites heretofore described as Baytown sites on the basis of ceramic assemblages containing cordmarked, red-slipped, and plain grog-tempered ceramics along with shell-tempered types. Like Marshall, these sites may date to the James Bayou or Cane Hills phases and represent early Mississippian manifestations in the region.

CONCLUSIONS

The results of the 1984-86 survey project provide valuable estimates of site density, diversity, and distribution in the study region. The highest site density occurs along the interface between the Mississippi Valley bluffs and the floodplain. Throughout the final few millennia of prehistory, and perhaps longer, this zone was the preferred locale for large, permanent settlements. During the Late Woodland and Mississippi periods, most sites appear to have been located in this zone. This settlement preference brought the largest communities into close proximity to the best agricultural soils in the region.

Mississippian settlements in this zone also tend to be less diverse and more comparable in size than contemporary sites in the Cairo Lowland and other floodplain locations. Towns and large villages were the typical settlements of the bluff zone, and, at least during the Mississippi period, those communities appear to have been the primary place of residence for most of the region's inhabitants. Relatively few Mississippian hamlets and farmsteads have been identified in the study region. This pattern contrasts significantly with that delineated in the Cairo Lowland (Lewis 1974, 1982) and in the Kincaid locality of southern Illinois (Muller 1986:190-207). For example, Muller (1986:206-207) characterizes the Kincaid site, less the mounds and the palisade, as "a cluster of farmsteads and hamlets." This pattern is quite different from that of the bluff zone.

The test excavations at Indian Camp Lake, Marshall, and White revealed a long record of prehistoric settlement and provided valuable chronological information and data on cultural adaptations. The Indian Camp Lake site yielded important new information about Middle and Late Woodland period occupations in the study region. Subsistence during those periods was based on the collection of seeds and nuts and the hunting and gathering of a wide range of food animals. The pottery is more similar to that of adjacent regions to the north and east than further south in the Lower Mississippi Alluvial Valley.

The Marshall site investigations yielded the first stratigraphic information available for James Bayou phase occupations in the region. The James Bayou component at Marshall was a relatively large village that was based on maize agriculture supplemented by hunted and collected foods. The village was occupied for several centuries during a time when major cultural adaptive changes occurred throughout the region and the Mid-South. Many of those changes are reflected in the stratigraphic cuts and in the material culture of the site inhabitants. Our investigation of those cultural changes was facilitated greatly by the excellent preservation of the James Bayou phase component and the effective absence of more recent prehistoric occupations at this locus.

The major component of the White site, a Mississippi period Medley phase village, was the latest prehistoric context investigated by this project. The Medley phase occupation was contemporaneous with a portion of the late occupation at the Adams site, a major town that is located

less than 3 km to the south of White. It is reasonable to assume that the social, political, and economic life of the White site community was tied to the Adams town. The late fourteenth to early fifteenth century age of the White site provides additional evidence for late prehistoric continuity of settlement patterning in this region.

The research complements and supplements past UIUC Western Kentucky Project investigations, which were primarily oriented towards Mississippian towns. Understanding the development and maintenance of these towns, as well as their role within late prehistoric social and political systems, has been enhanced through the analysis of the survey and excavation data reported here. The survey results and Kreisa's (1987) recent survey in the Big Bottom of Fulton County southwest of the town of Hickman have identified important temporal trends in settlement patterns, and substantially increased the site survey data base in this region. The next step in this research has already been implemented. In 1986, Lewis began an investigation of second-order late prehistoric sites in the Mississippi River counties with support from the Kentucky Heritage Council and the University of Illinois Research Board. This study is directed by Paul Kreisa. The "second-order village" project draws on the site survey data base and explores the structure and organization of settlement hierarchies in the late prehistory of this region.

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